CF-470L

AEP Model

FM/SW/MW/LW CASSETTE-CORDER

SPECIFICATIONS

GENERAL

Power Requirements:	110, 127, 220, or 240 V ac adjustable, 50/60 Hz 6 V dc, four batteries size "D" (IEC Designation R20) or 12 V car battery with Sony Car Battery Cord DCC-129 (optional)
Power Consumption:	10 W ac
Power Output:	4 W (max.)
Speakers:	2-way speaker 16 cm (6½ inches) dia. (woofer) 5 cm (2 inches) dia. (tweeter)
Dimensions:	Approx. 412 (w) x 265 (h) x 110 (d) mm 16¼ (w) x 10½ (h) x 4⅜ (d) inches including projecting parts and controls not including handle
Weight:	Approx. 4.5 kg, 9 lb 15 oz including batteries

RADIO SECTION

Frequency Range:	FM 87.5 – 108 MHz SW 6 – 18 MHz (50 – 16.7 m) MW 530 – 1,605 kHz (566 – 187 m) LW 150 – 350 kHz (2,000 – 857 m)
Antennas:	FM/SW: Telescopic antenna MW/LW: Built-in ferrite-rod antenna

TAPE RECORDER SECTION

Recording System:	2-track 1-channel monaural
Fast Winding Time:	Approx. 2 min. with Sony Cassette C-60
Frequency Response:	50 – 10,000 Hz
Inputs:	MIC . . . 1 (minijack) sensitivity 0.2 mV (−72 dB) for low impedance microphone LINE . . . 1 (minijack) sensitivity 0.14 V (−15 dB) input impedance 100 k ohms
Output:	EARPHONE . . . 1 (minijack) 8-ohm earphone or load impedance 10 k ohms or higher
Other Jacks:	REC/PB . . . . . 1 (5-pin DIN jack) REMOTE 1
Battery Life:	Approx. 10 hours of continuous recording from the Built-in Microphone with Sony Super Batteries size "D"

SAFETY-RELATED COMPONENT WARNING!!

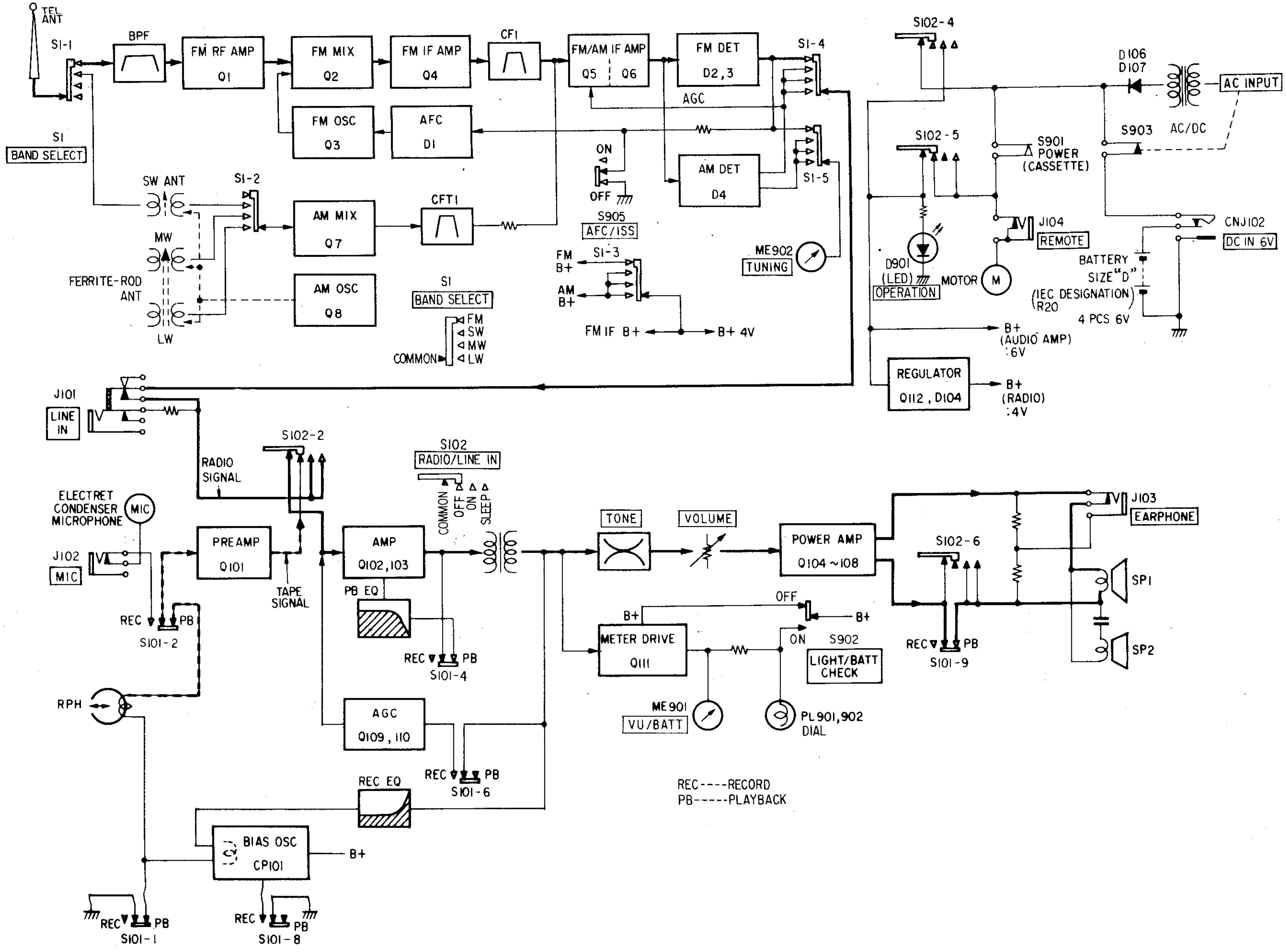
COMPONENTS IDENTIFIED BY SHADING ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SONY®

SERVICE MANUAL

667

SECTION 1
BLOCK DIAGRAM


TEL ANT
S1-1
S1 BAND SELECT
BPF
FM RF AMP Q1
FM MIX Q2
FM IF AMP Q4
CF1
FM/AM IF AMP Q5 Q6
FM DET D2,3
S1-4
AGC
FM OSC Q3
AFC D1
ON
OFF
S905 AFC/ISS
AM DET D4
S1-5
ME902 TUNING
SW ANT
S1-2
MW
FERRITE-ROD ANT
LW
AM MIX Q7
CFT1
AM OSC Q8
S1 BAND SELECT
FM
SW
MW
LW
COMMON
FM B+
AM B+
S1-3
FM IF B+
B+ 4V
S102-4
D106 D107
AC INPUT
S102-5
S901 POWER (CASSETTE)
S903
AC/DC
J104 REMOTE
CNJ102 DC IN 6V
D901 (LED) OPERATION
MOTOR
M
BATTERY SIZE "D" (IEC DESIGNATION R20) 4 PCS 6V
B+ (AUDIO AMP) 6V
REGULATOR Q112, D104
B+ (RADIO) 4V
J101 LINE IN
RADIO SIGNAL
S102-2
S102 RADIO/LINE IN
COMMON
OFF
ON
SLEEP
ELECTRET CONDENSER MICROPHONE
MIC
J102 MIC
PREAMP Q101
TAPE SIGNAL
AMP Q102,103
PB EQ
TONE
VOLUME
POWER AMP Q104~108
J103 EARPHONE
S102-6
SP1
SP2
REC
PB
S101-2
S101-4
S101-9
B+
OFF
METER DRIVE Q111
ON
S902 LIGHT/BATT CHECK
ME901 VU/BATT
PL901,902 DIAL
RPH
AGC Q109, 110
S101-6
REC EQ
BIAS OSC CP101
S101-1
S101-8
REC----RECORD
PB-----PLAYBACK

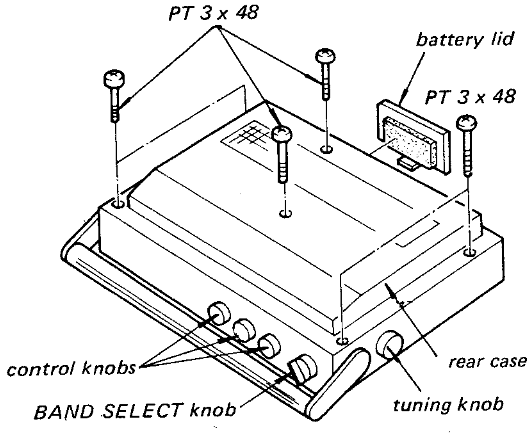
SECTION 2

DISASSEMBLY AND REPLACEMENT

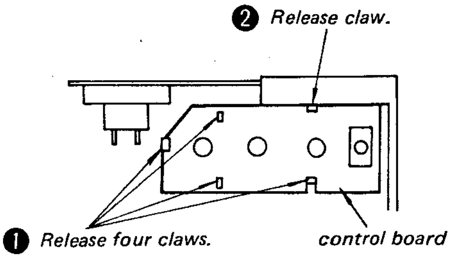
Rear Case and Front Case

Rear Cover:	Remove battery lid, batteries and six screws (PT 3 x 48).
Front Case:	Depress EJECT button and open the cassette lid. Pull five knobs off.

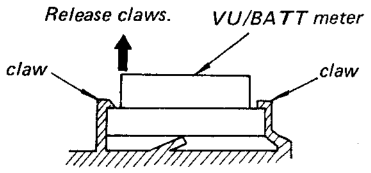
Note: When reattaching the front case, turn the tuning shaft fully clockwise to place the dial pointer at the right-most position.


PT 3 x 48
battery lid
PT 3 x 48
control knobs
BAND SELECT knob
rear case
tuning knob

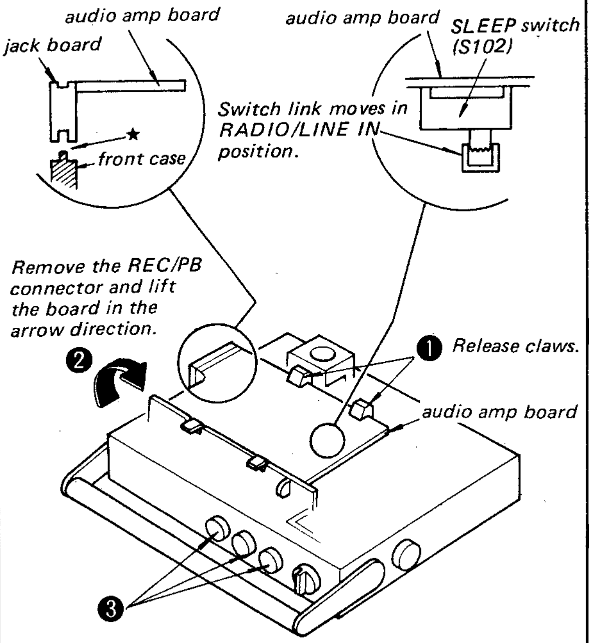
Control Board


❷ Release claw.
❶ Release four claws.
control board

VU/BATT Meter

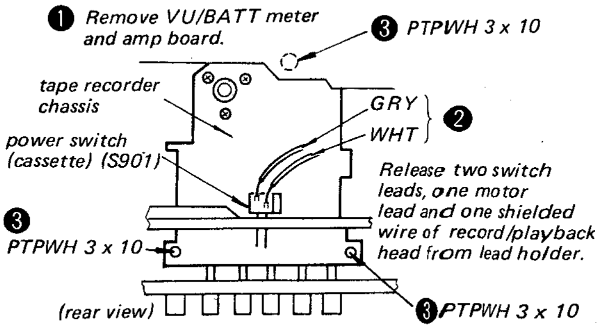

Release claws.
VU/BATT meter
claw
claw

Audio Amp Board


audio amp board
jack board
★
front case
audio amp board
SLEEP switch (S102)
Switch link moves in RADIO/LINE IN position.
Remove the REC/PB connector and lift the board in the arrow direction.
❷
❶ Release claws.
audio amp board
❸

Note: When reattaching the audio amp board, position the switch link to catch the SLEEP switch knob, and engage the jack board with the front case properly (shown with mark ★).

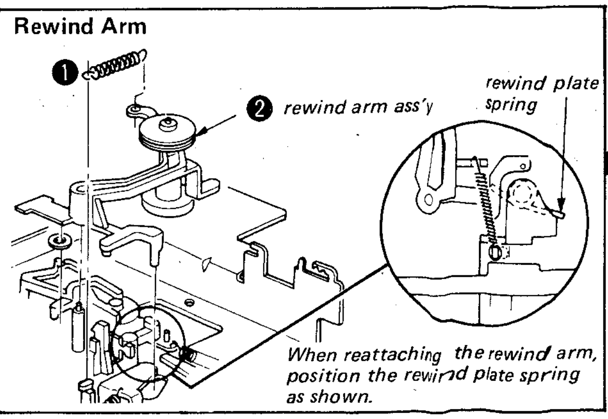
Tape Recorder Chassis


❶ Remove VU/BATT meter and amp board.
❸ PTPWH 3 x 10
tape recorder chassis
GRY
WHT
❷
power switch (cassette) (S901)
Release two switch leads, one motor lead and one shielded wire of record/playback head from lead holder.
❸
PTPWH 3 x 10
(rear view)
❸ PTPWH 3 x 10

Drive Belt

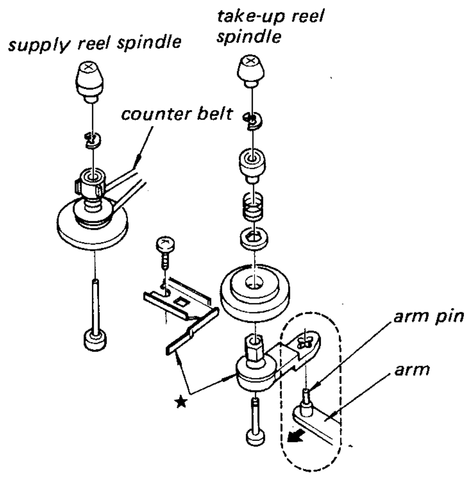
Flywheel

Rewind Arm


❶
❷ rewind arm ass'y
rewind plate spring
When reattaching the rewind arm, position the rewind plate spring as shown.

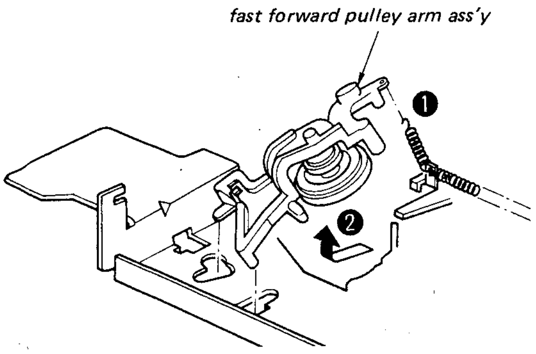
Reel Spindles

Parts shown by ★ touch each other. Remove the left-side brake simultaneously.

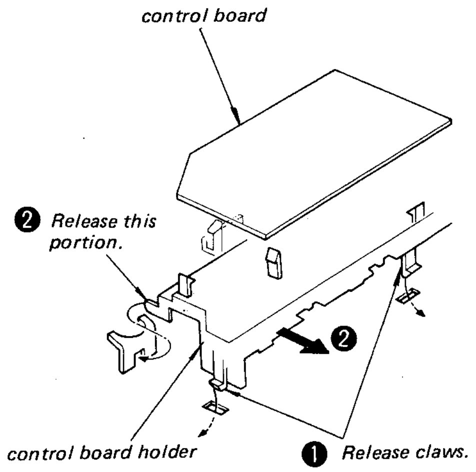

take-up reel spindle
supply reel spindle
counter belt
arm pin
arm
★

Note: When reattaching, insert the arm pin in the hole of the take-up reel spindle by pushing it to the arrowed direction while turning the supply reel spindle by hand.

Fast Forward Pulley Arm

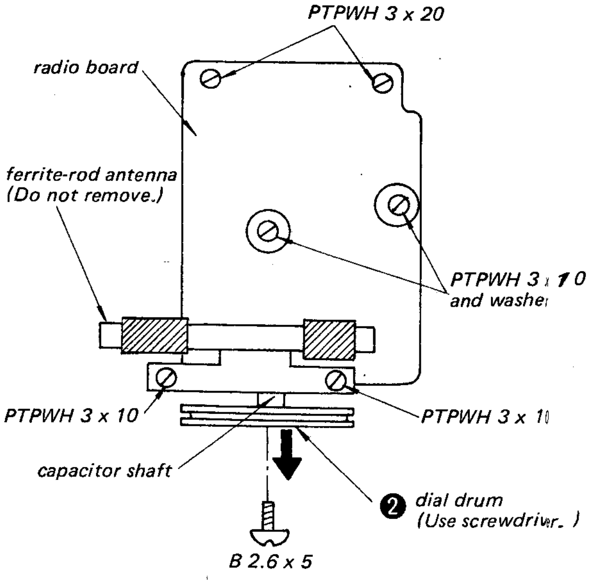

fast forward pulley arm ass'y
❶
❷

Control Board Holder


control board
❷ Release this portion.
❷
control board holder
❶ Release claws.

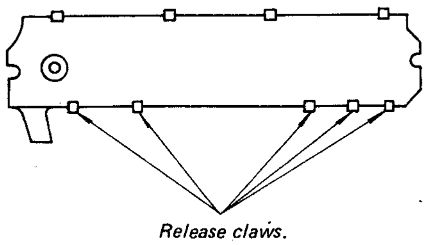
Radio Board

❶ *Remove seven screws.*


PTPWH 3 x 20
radio board
ferrite-rod antenna (Do not remove.)
PTPWH 3 x 10 and washe
PTPWH 3 x 10
PTPWH 3 x 1
capacitor shaft
❷ dial drum (Use screwdriver.)
B 2.6 x 5

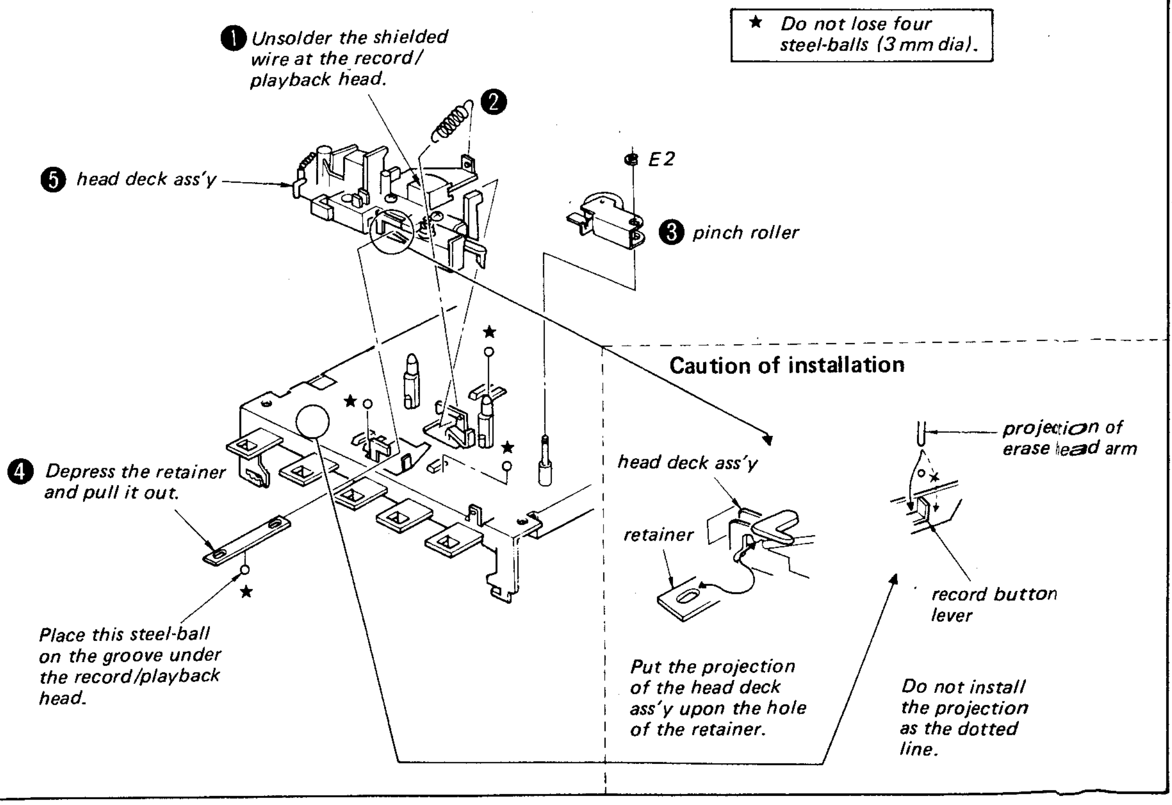
Note: When reattaching the radio board, push the board toward the ferrite-rod antenna side to ensure the BAND switch operation and fasten the screws.

Dial Scale


Release claws.

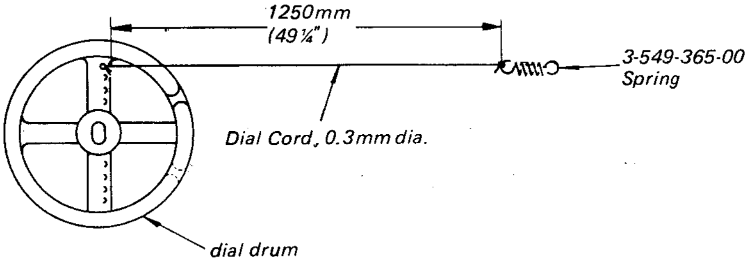
Dial Cord Stringing

Head Deck

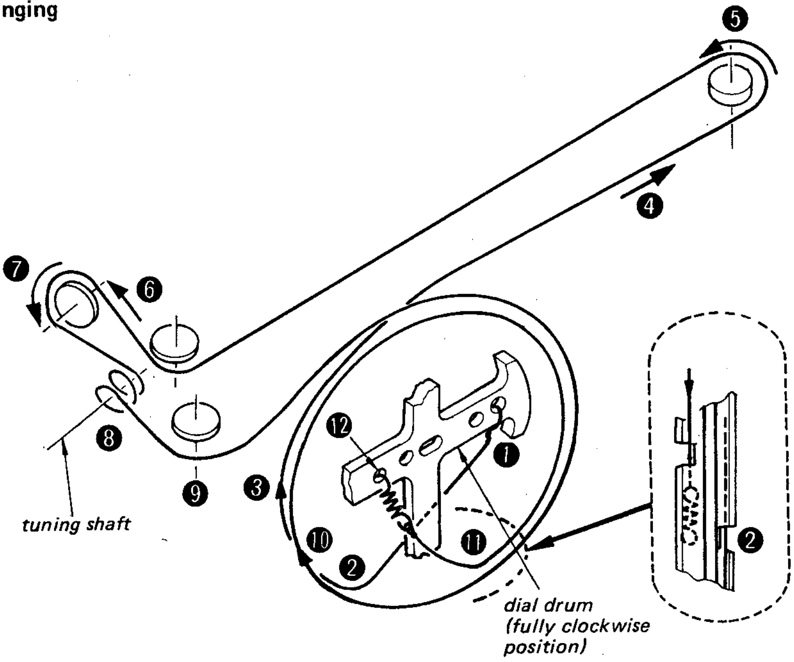

★ Do not lose four steel-balls (3 mm dia).
❶ Unsolder the shielded wire at the record/playback head.
❷
❺ head deck ass'y
E2
❸ pinch roller
❹ Depress the retainer and pull it out.
★
Place this steel-ball on the groove under the record/playback head.
Caution of installation
head deck ass'y
retainer
Put the projection of the head deck ass'y upon the hole of the retainer.
projection of erase head arm
record button lever
Do not install the projection as the dotted line.

2-2. DIAL CORD STRINGING

1) Dial Cord Preparation

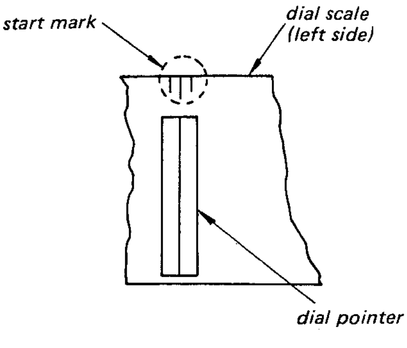

1250mm
(49¼")
3-549-365-00
Spring
Dial Cord, 0.3mm dia.
dial drum

2) Dial Cord Stringing


❺
❹
❼
❻
❽
❾
❸
⓬
❶
❿
❷
⓫
tuning shaft
dial drum
(fully clockwise
position)
❷

3) Dial Pointer Setting

Slide the dial pointer and set it to the center line of the start mark.


start mark
dial scale
(left side)
dial pointer

SECTION 3

ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	

2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply a suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

3-1. TAPE RECORDER SECTION

1) Mechanical Adjustments

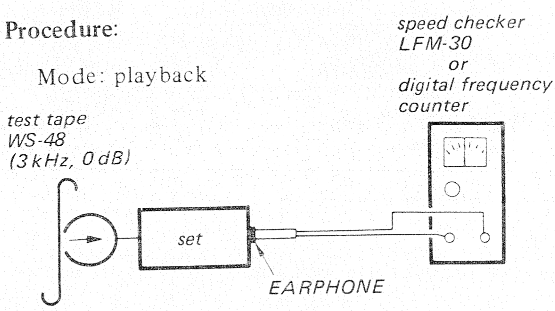
Tape Speed Adjustment

Setting:

VOLUME control: mechanical mid
Power source: 6 V dc

Procedure:

Mode: playback

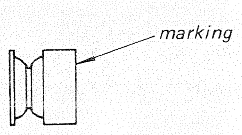


speed checker
LFM-30
or
digital frequency counter
test tape
WS-48
(3 kHz, 0 dB)
set
EARPHONE

Specification:

Speed checker	Digital frequency counter
–2.5%, +3%	2,925 – 3,090 Hz

If necessary, replace the motor pulley.



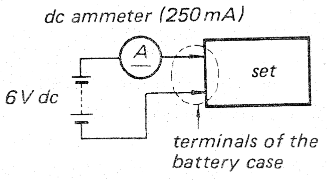
Motor pulley Part No.	Marking	Tape speed change
3-701-813-07	P	down
3-701-813-08	Q, R	↕
3-701-813-09	S, T	up

Note: Perform the motor pulley height adjustment.

Flywheel Thrust Play Adjustment

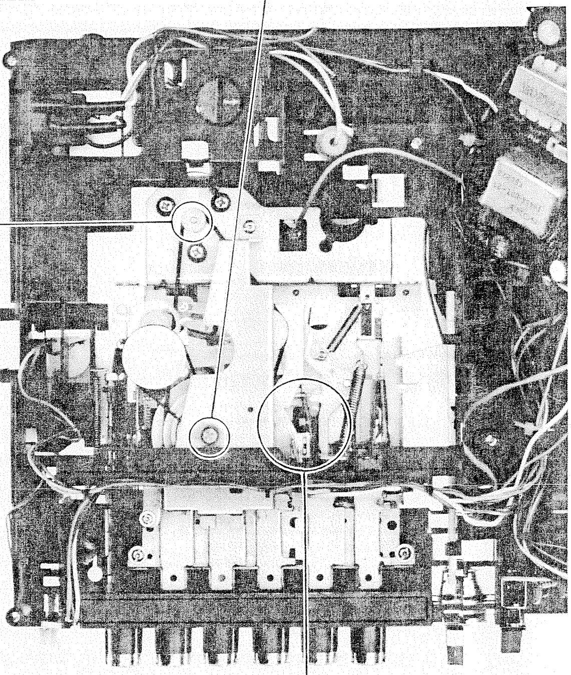
Procedure:

1. Mode: playback



dc ammeter (250 mA)
A
set
6 V dc
terminals of the battery case

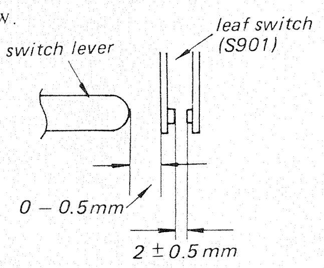
2. Turn the screw counterclockwise until the screw tip is detached from the flywheel shaft.
3. Gradually turn the screw clockwise to the position where the motor current suddenly increases.
4. Then, turn the screw counterclockwise about ¼ turn from the position obtained in step 3.



Leaf Switch (S901) Position Adjustment

– Stop Mode –

Adjust the leafs of switch to obtain the clearance shown below.



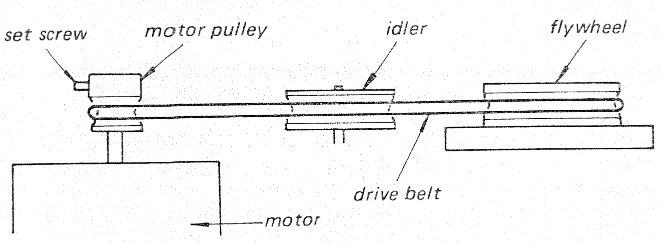
leaf switch
(S901)
switch lever
0 – 0.5 mm
2 ± 0.5 mm

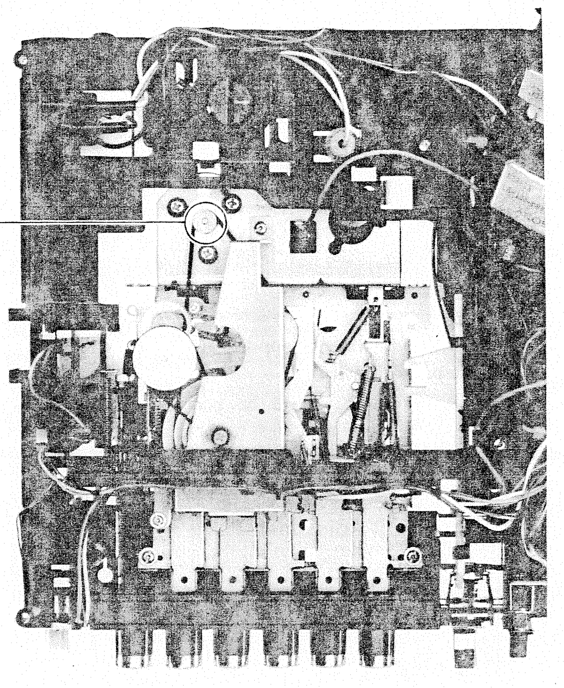
Motor Pulley Height Adjustment

After replacing the motor pulley or the flywheel, this adjustment should be performed.

Procedure:

1. Keep the set horizontal.
2. Adjust the motor pulley height so that the drive belt is straight without twist.


set screw
motor pulley
idler
flywheel
drive belt
motor



Rewind Torque Measurement

Torque meter	Torque
CQ-201A	55 – 100g·cm (0.77 – 1.4 oz·inch)

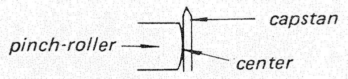
Forward and Fast Forward Torque Measurements

	Torque meter	Torque
Forward	CQ-101A, CQ-102A, CQ-103A	22.5 – 55g·cm (0.35 – 0.77 oz·inch)
Fast Forward	CQ-201A	55 – 100g·cm (0.77 – 1.4 oz·inch)

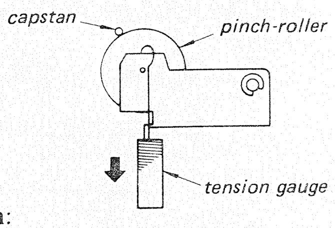
Pinch Roller Pressure Measurement

– Playback Mode –

1. Depressing the forward button slowly, confirm the center of the pinch-roller to touch the capstan at first.

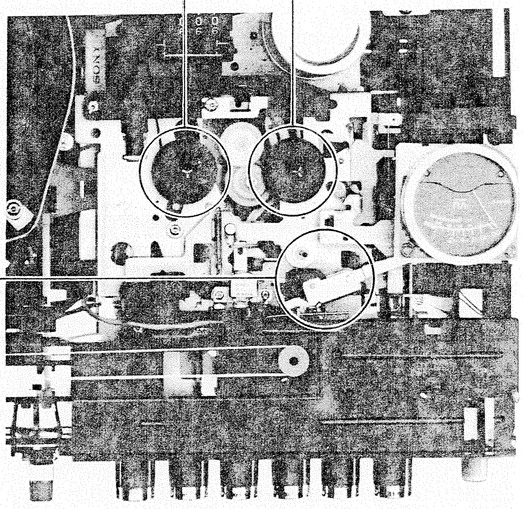

capstan
pinch-roller
center

2. Pull the pinch roller away from the capstan using a tension gauge as shown by the arrow. Make the pinch roller return to the capstan slowly. The pressure should be measured at the point where the pinch roller just contacts the capstan.


capstan
pinch-roller
tension gauge

Specification:

290 – 370 g (10 – 13 oz)



2) ELECTRICAL ADJUSTMENTS

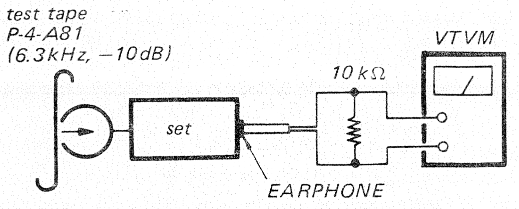
Record/Playback Head Azimuth Adjustment

Setting:

VOLUME control: mechanical mid

Procedure:

1. Mode: playback

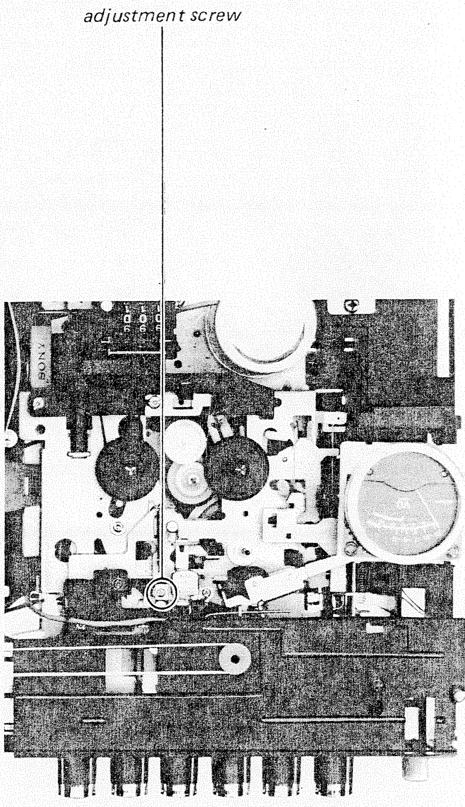

test tape
P-4-A81
(6.3kHz, −10dB)
set
10 kΩ
VTVM
EARPHONE

2. Turn the adjustment screw for the highest VTVM reading.

   Note: Several peak may appear, take the highest.

3. Apply a suitable locking compound to the adjusted screw.

Adjustment Location:

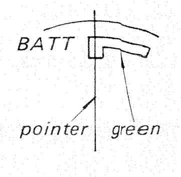

adjustment screw

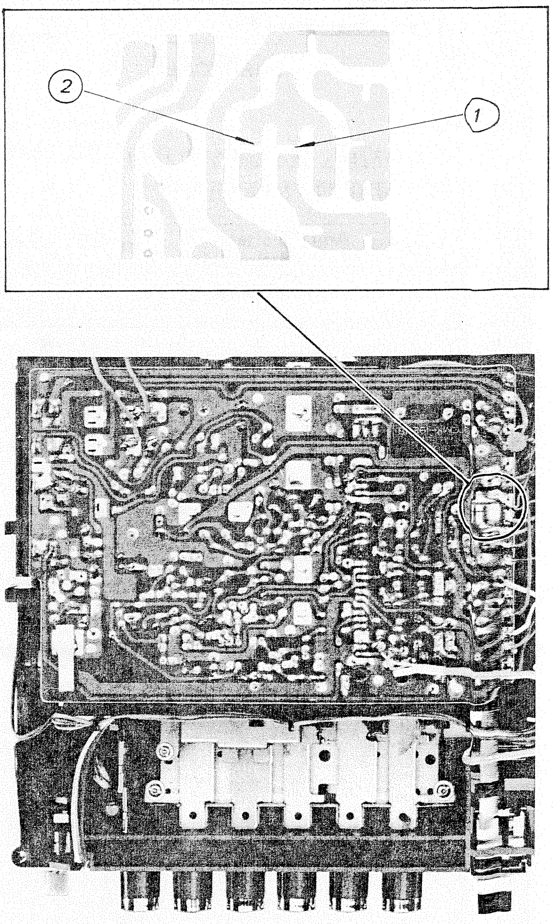
Battery Meter Calibration

Setting:

Power supply voltage:	4.4 V dc
VOLUME control:	minimum
RADIO switch:	OFF
Mode:	playback with no cassette installed
LIGHT/BATT CHECK button:	pressed

Adjustment Location and Specification:

Pattern Connection	Pointer deflection	Meter indication
①	up ↕ down	 BATT pointer green
②		



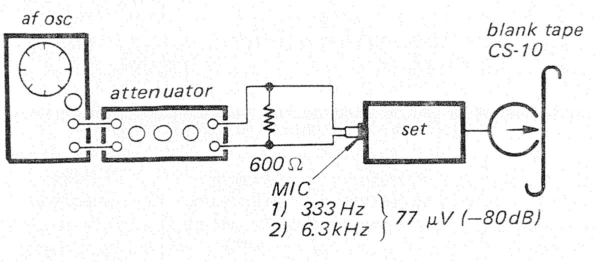
Record Bias Adjustment

Setting:

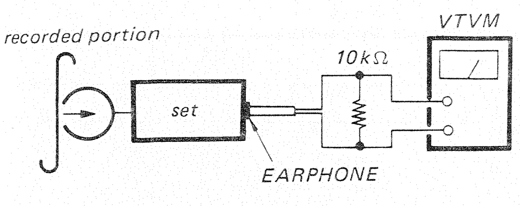
BASS, TREBLE controls: MAX
RADIO switch: OFF

Procedure:

1. Mode: record


af osc
attenuator
600Ω
MIC
1) 333 Hz
2) 6.3kHz
77 μV (−80dB)
set
blank tape
CS-10

2. Mode: playback


recorded portion
set
EARPHONE
10kΩ
VTVM

Playback 333Hz. Adjust VOLUME control for 0.25V (−10dB) VTVM reading.

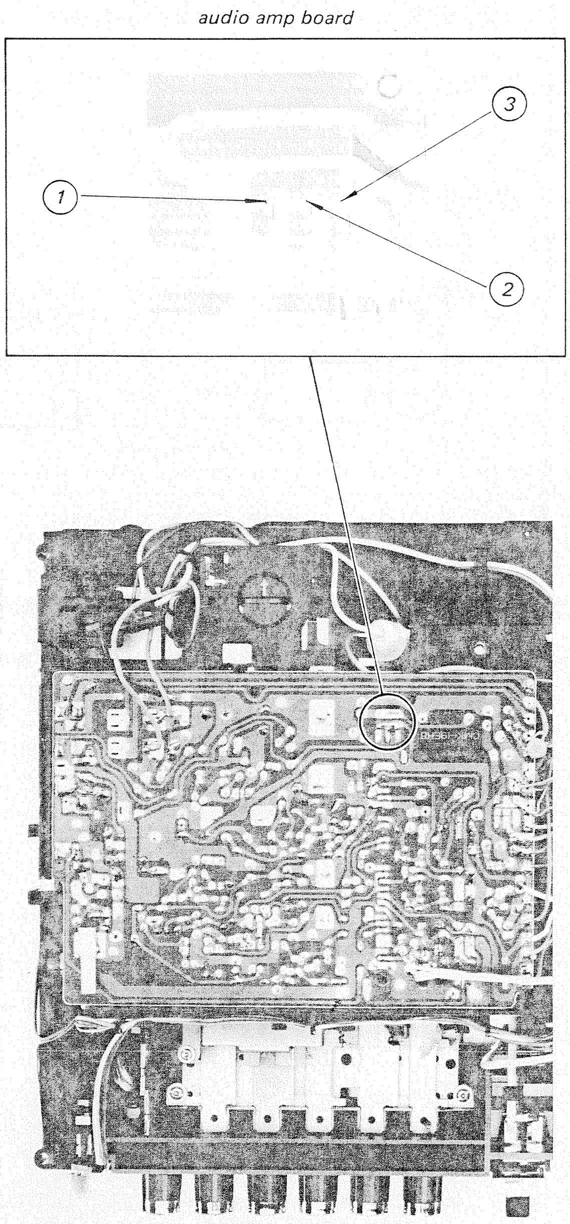
3.

Playback	Adjust pattern connection	VTVM reading
6.3 kHz	①, ②, ③	0.47V (−4.5dB)

Pattern connection	6.3kHz VTVM reading
①	down
②	↕
③	up

4. If necessary, repeat above steps.

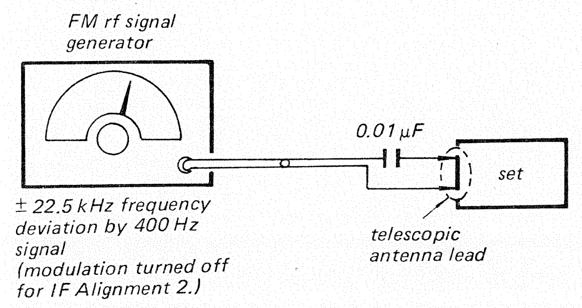
Adjustment Location:

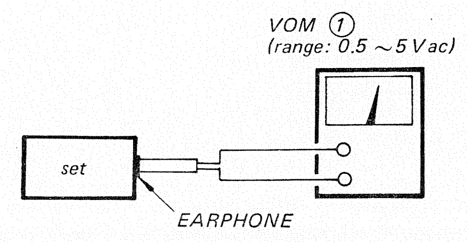

audio amp board
①
②
③

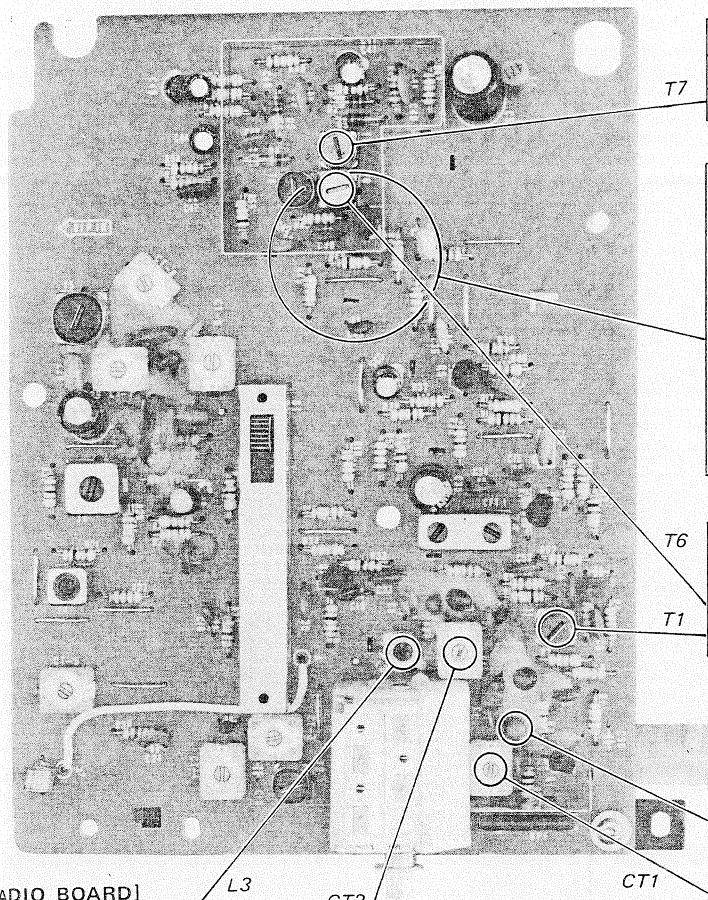
3-2. RADIO SECTION

1) FM SECTION

- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

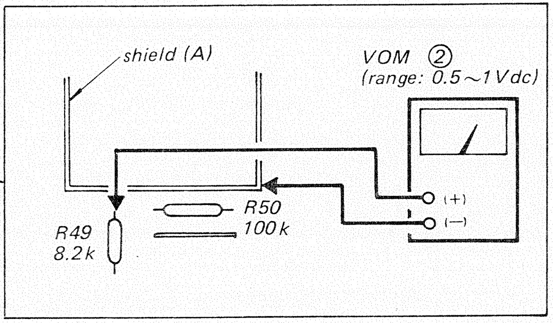

FM rf signal generator
0.01 μF
set
± 22.5 kHz frequency deviation by 400 Hz signal (modulation turned off for IF Alignment 2.)
telescopic antenna lead


VOM ①
(range: 0.5 ~ 5 V ac)
set
EARPHONE


T7
T6
T1
L3
CT2
CT1
L2

[RADIO BOARD]
— Component Side —

FM IF ALIGNMENT 2 (10.7MHz with no modulation)
Adjust for 0V reading on VOM ② .
T7


shield (A)
VOM ②
(range: 0.5 ~ 1 Vdc)
(+)
(−)
R49
8.2 k
R50
100 k

FM IF ALIGNMENT 1 (10.7MHz with modulation)
Adjust for a maximum reading on VOM ① .
T6
T1

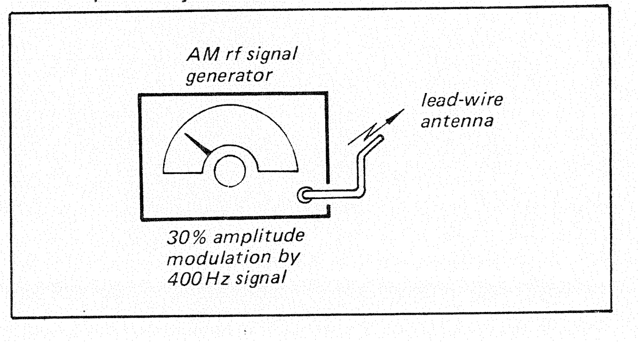
L3	CT2
87.1MHz	108.5MHz
Adjust for a maximum reading on VOM ① .	
FM FREQUENCY COVERAGE ADJUSTMENT	

CT1	L2
108.5MHz	87.1MHz
Adjust for a maximum reading on VOM ① .	
FM TRACKING ADJUSTMENT	

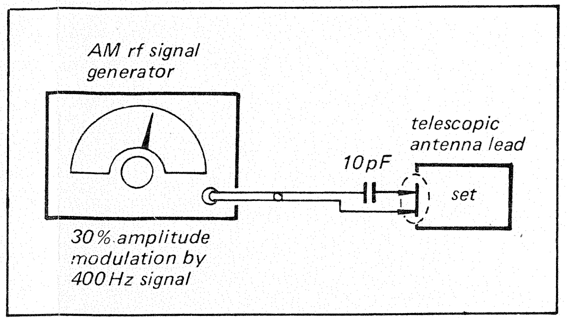
2) AM SECTION

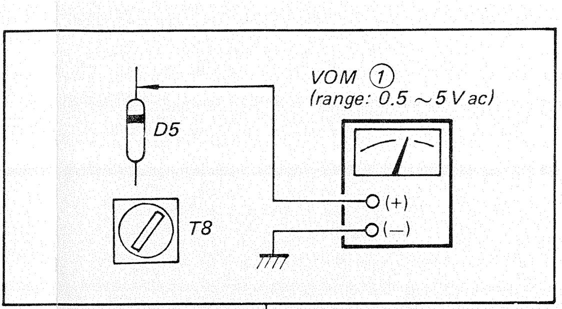
- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

For MW, LW Adjustments


AM rf signal generator
lead-wire antenna
30% amplitude modulation by 400 Hz signal

For SW Adjustments

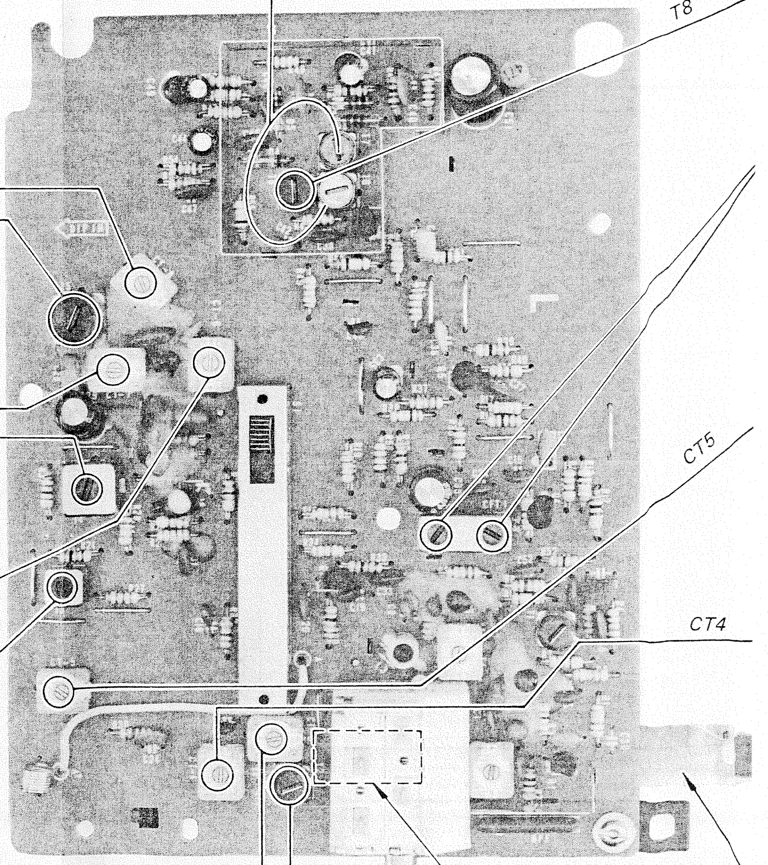

AM rf signal generator
telescopic antenna lead
10 pF
set
30% amplitude modulation by 400 Hz signal


D5
T8
VOM ①
(range: 0.5 ~ 5 V ac)
(+)
(−)

LW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for maximum reading on VOM ① .	
365 kHz	CT8
145 kHz	T5

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for maximum reading on VOM ① .	
1680 kHz	CT7
520 kHz	T4

SW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for maximum reading on VOM ① .	
18.4MHz	CT6
5.8MHz	T3


CT8
T5
CT7
T4
CT6
T3
T8
CT5
CT4
CT3
T2
L5

[RADIO BOARD]
— Component Side —

SW TRACKING ADJUSTMENT	
Adjust for maximum reading on VOM ① .	
18.4MHz	CT3
5.8MHz	T2

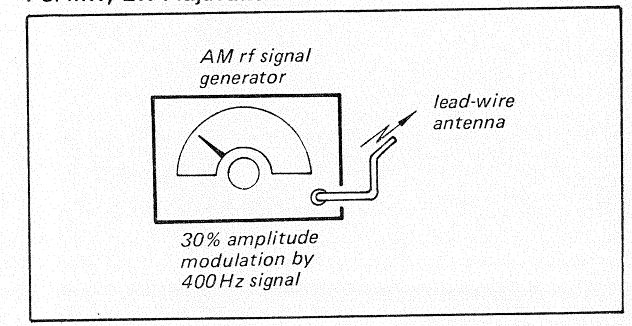
LW TRACKING
ADJUSTMENT

M
A

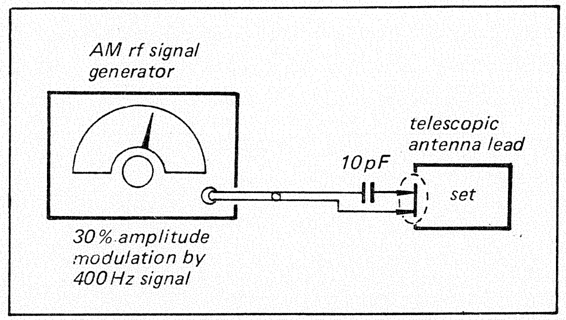
2) AM SECTION

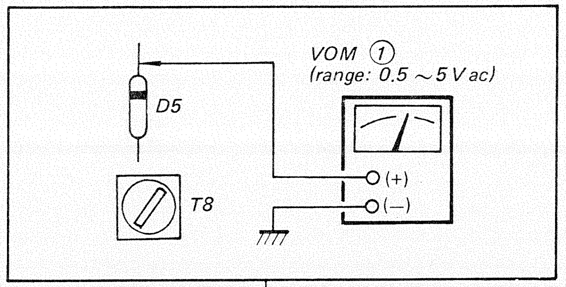
- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

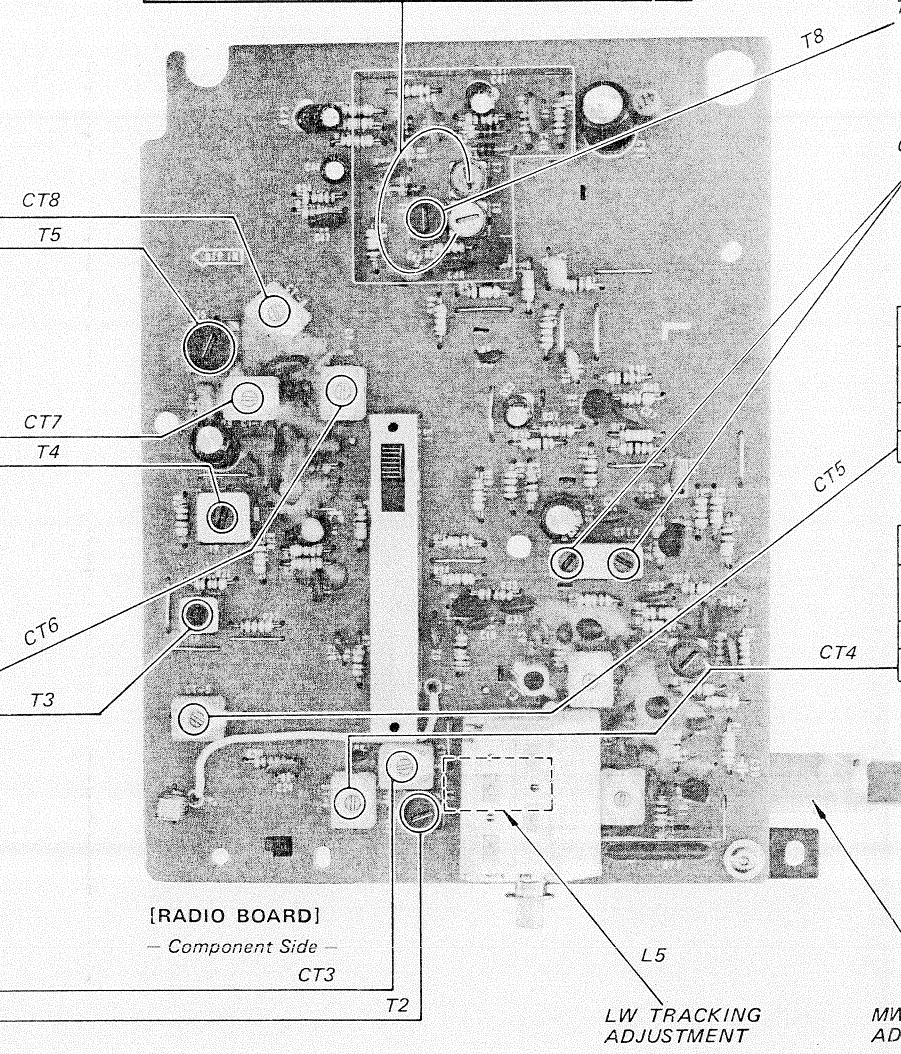
For MW, LW Adjustments


AM rf signal generator
lead-wire antenna
30% amplitude modulation by 400Hz signal

For SW Adjustments


AM rf signal generator
10pF
telescopic antenna lead
set
30% amplitude modulation by 400Hz signal


VOM ①
(range: 0.5 ~ 5 V ac)
D5
T8
(+)
(–)


T8
T8 (Adjustment is not required.)
CFT1 (Adjustment is not required.)
CT8
T5
CT7
T4
CT6
T3
CT5
CT4
CT3
T2
L5
LW TRACKING ADJUSTMENT
L5
MW TRACKING ADJUSTMENT

[RADIO BOARD]
– Component Side –

LW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for maximum reading on VOM ①.	
365kHz	CT8
145kHz	T5

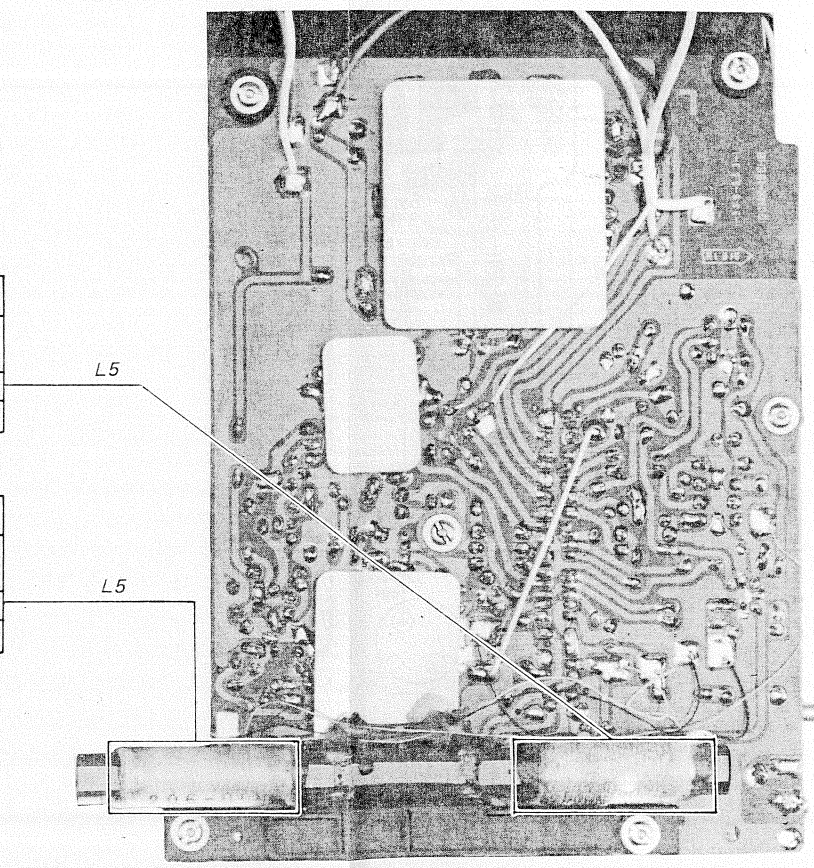
MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for maximum reading on VOM ①.	
1680kHz	CT7
520kHz	T4

SW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for maximum reading on VOM ①.	
18.4MHz	CT6
5.8MHz	T3

SW TRACKING ADJUSTMENT	
Adjust for maximum reading on VOM ①.	
18.4MHz	CT3
5.8MHz	T2

LW TRACKING ADJUSTMENT	
Adjust for maximum reading on VOM ①.	
160kHz	L5
330kHz	CT5

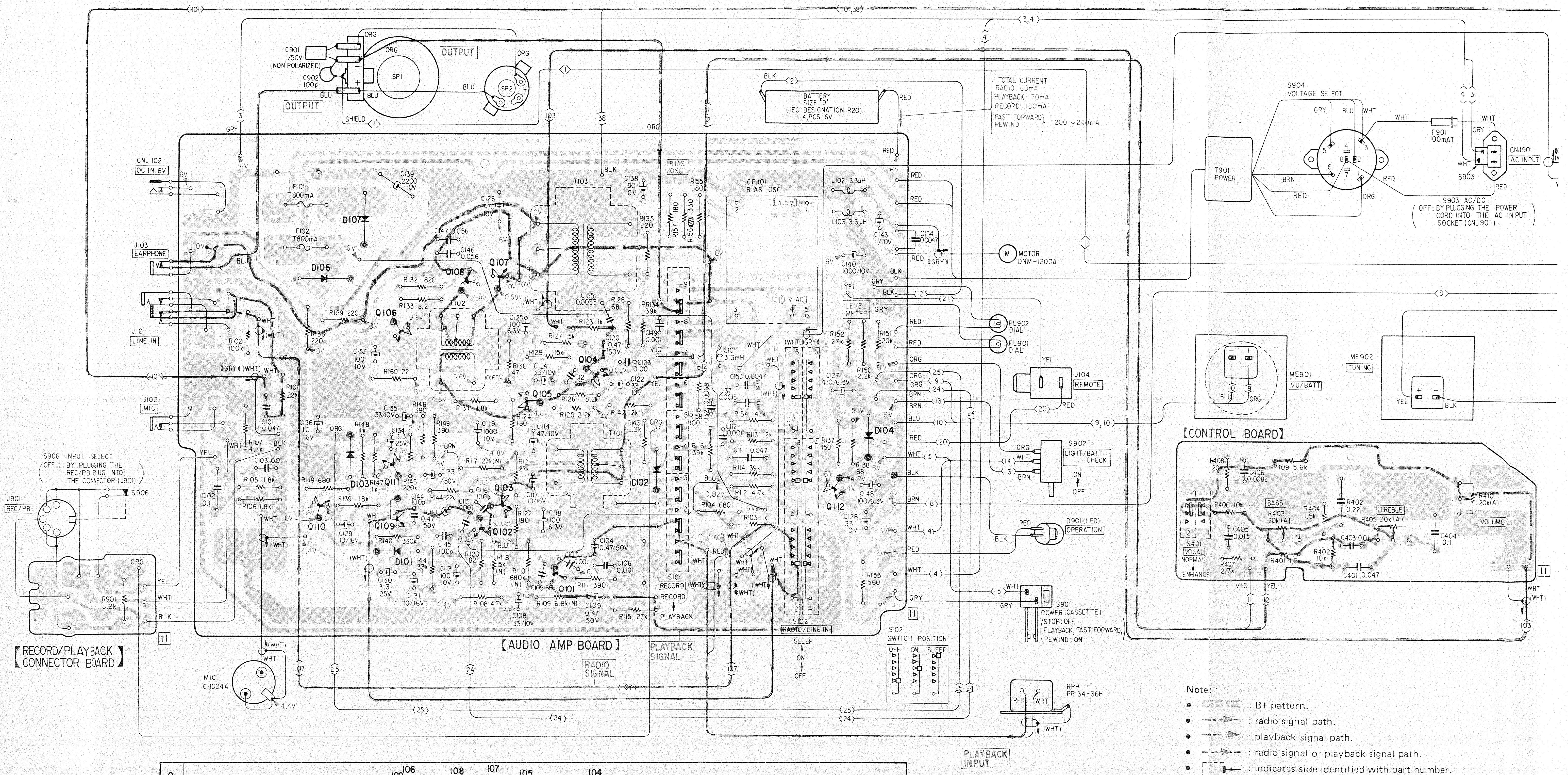
MW TRACKING ADJUSTMENT	
Adjust for maximum reading on VOM ①.	
620kHz	L5
1400kHz	CT4



[RADIO BOARD]
– Component Side –

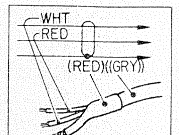
SECTION 4
DIAGRAMS

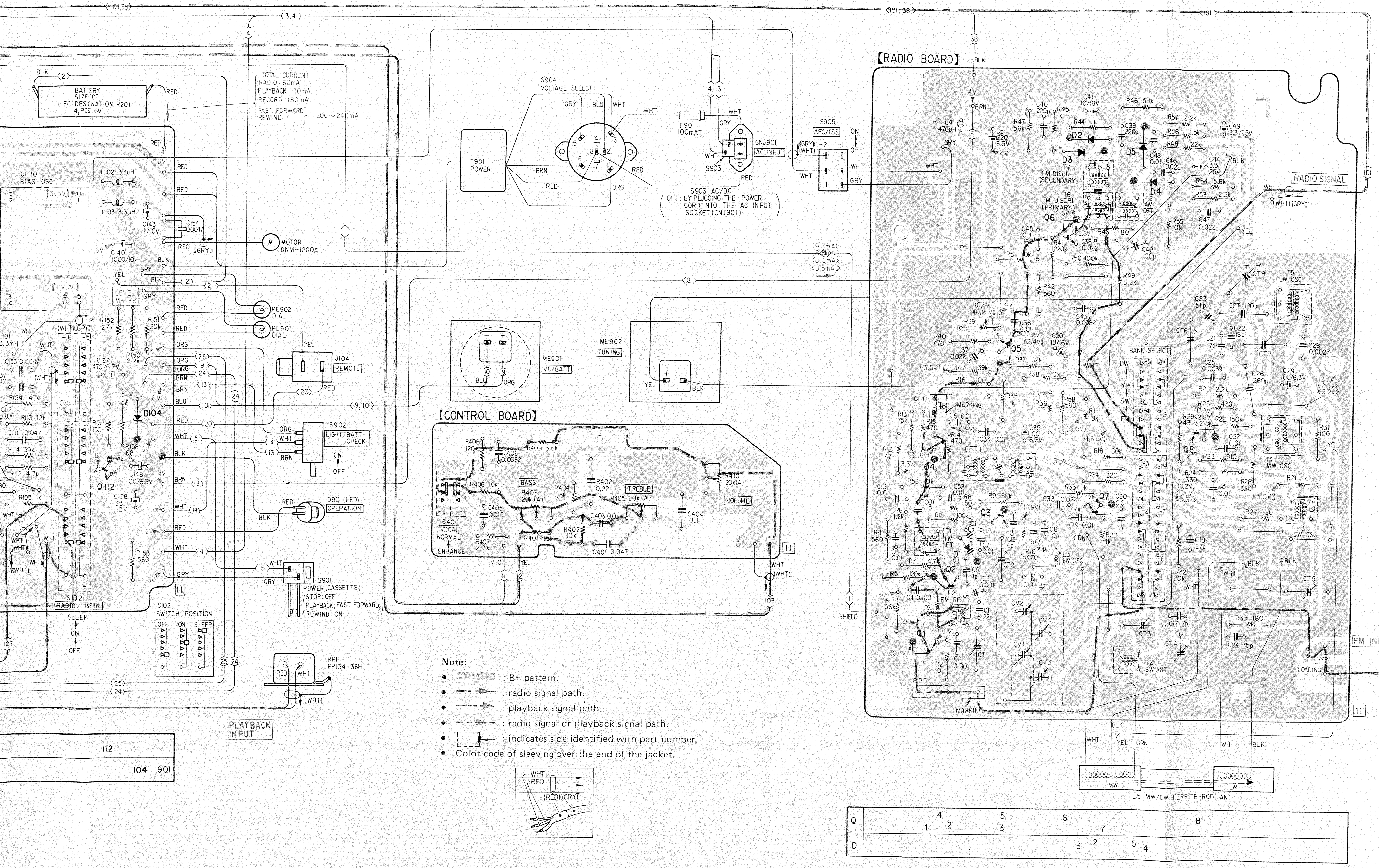
4-1. MOUNTING DIAGRAM
– Conductor Side –


OUTPUT
C901 1/50V (NON POLARIZED)
C902 100p
SP1
SP2
SHIELD
ORG
BLU
GRY
BLK
RED
WHT
YEL
BRN
CNJ 102 DC IN 6V
F101 T800mA
F102 T800mA
J103 EARPHONE
J101 LINE IN
J102 MIC
D107
D106
BATTERY SIZE "D" (IEC DESIGNATION R20) 4 PCS 6V
TOTAL CURRENT
RADIO 60mA
PLAYBACK 170mA
RECORD 180mA
FAST FORWARD REWIND 200～240mA
T103
BIAS OSC
CP101 BIAS OSC
L102 3.3μH
L103 3.3μH
C154 0.0047
MOTOR DNM-1200A
C140 1000/10V
C143 1/10V
LEVEL METER
PL902 DIAL
PL901 DIAL
J104 REMOTE
S902 LIGHT/BATT CHECK
ON
OFF
D901 (LED) OPERATION
S901 POWER (CASSETTE) STOP: OFF PLAYBACK, FAST FORWARD, REWIND: ON
S102 SWITCH POSITION
OFF ON SLEEP
RADIO/LINE IN
SLEEP
S101 RECORD
PLAYBACK
[AUDIO AMP BOARD]
RADIO SIGNAL
PLAYBACK SIGNAL
PLAYBACK INPUT
RPH PP134-36H
Q101 Q102 Q103 Q104 Q105 Q106 Q107 Q108 Q109 Q110 Q111 Q112
D101 D102 D103 D104
T101 T102
L101 3.3mH
MIC C-1004A
S906 INPUT SELECT (OFF: BY PLUGGING THE REC/PB PLUG INTO THE CONNECTOR (J901))
J901 REC/PB
R901 8.2k
[RECORD/PLAYBACK CONNECTOR BOARD]
S904 VOLTAGE SELECT
T901 POWER
F901 100mAT
CNJ901 AC INPUT
S903
S903 AC/DC (OFF: BY PLUGGING THE POWER CORD INTO THE AC INPUT SOCKET (CNJ901))
ME901 VU/BATT
ME902 TUNING
[CONTROL BOARD]
R406 120
C406 0.0082
R409 5.6k
BASS
R403 20k(A)
R404 1.5k
R402 0.22
TREBLE
R405 20k(A)
R410 20k(A)
VOLUME
C404 0.1
C405 0.015
C403 0.01
R402 10k
R401 1.5k
C401 0.047
R407 2.7k
S401 VOCAL NORMAL ENHANCE
V10

Q	110	111	109	106	108	102	107	103	105	101	104	112
D	106	103	107	101	102	104	901					

Note:
- ▨ : B+ pattern.
- —▷— : radio signal path.
- ---▶--- : playback signal path.
- —▷— : radio signal or playback signal path.
- [ ]— : indicates side identified with part number.
- Color code of sleeving over the end of the jacket.


WHT
RED
(RED)(GRY)


【RADIO BOARD】
【CONTROL BOARD】
BATTERY SIZE 'D' (IEC DESIGNATION R20) 4 PCS 6V
TOTAL CURRENT
RADIO 60mA
PLAYBACK 170mA
RECORD 180mA
FAST FORWARD REWIND 200～240mA
S904 VOLTAGE SELECT
T901 POWER
F901 100mAT
CNJ901 AC INPUT
S903 AC/DC (OFF: BY PLUGGING THE POWER CORD INTO THE AC INPUT SOCKET (CNJ901))
S905 AFC/ISS ON OFF
CP101 BIAS OSC
MOTOR DNM-1200A
PL902 DIAL
PL901 DIAL
J104 REMOTE
LEVEL METER
S902 LIGHT/BATT CHECK ON OFF
D901 (LED) OPERATION
S901 POWER (CASSETTE) /STOP: OFF PLAYBACK, FAST FORWARD, REWIND: ON
S102 RADIO/LINE IN
SLEEP ON OFF
S102 SWITCH POSITION OFF ON SLEEP
RPH PP134-36H
PLAYBACK INPUT
ME901 VU/BATT
ME902 TUNING
S401 VOCAL NORMAL ENHANCE
BASS
TREBLE
VOLUME
R410 20k(A)
RADIO SIGNAL
FM INPUT
ANT1 TEL ANT
L1 LOADING
S1 BAND SELECT
T5 LW OSC
T4 MW OSC
T3 SW OSC
T2 SW ANT
T7 FM DISCRI (SECONDARY)
T6 FM DISCRI (PRIMARY)
T8 AM DET
T1 FM IFT
L3 FM OSC
L2 FM RF
BPF
CFT1
CF1
MARKING
SHIELD
L5 MW/LW FERRITE-ROD ANT
MW
LW
112
104 901

Note:

- ▨ : B+ pattern.
- –·–▶ : radio signal path.
- ––▶ : playback signal path.
- – –▶ : radio signal or playback signal path.
- ⌐¬ : indicates side identified with part number.
- Color code of sleeving over the end of the jacket.

Q	1	4	2	5 3	6	7	8		
D	1	3	2	5	4				

4-2. SCHEMATIC DIAGRAM

Note: The components identified by shading are critical for safety. Replace only with part number specified.

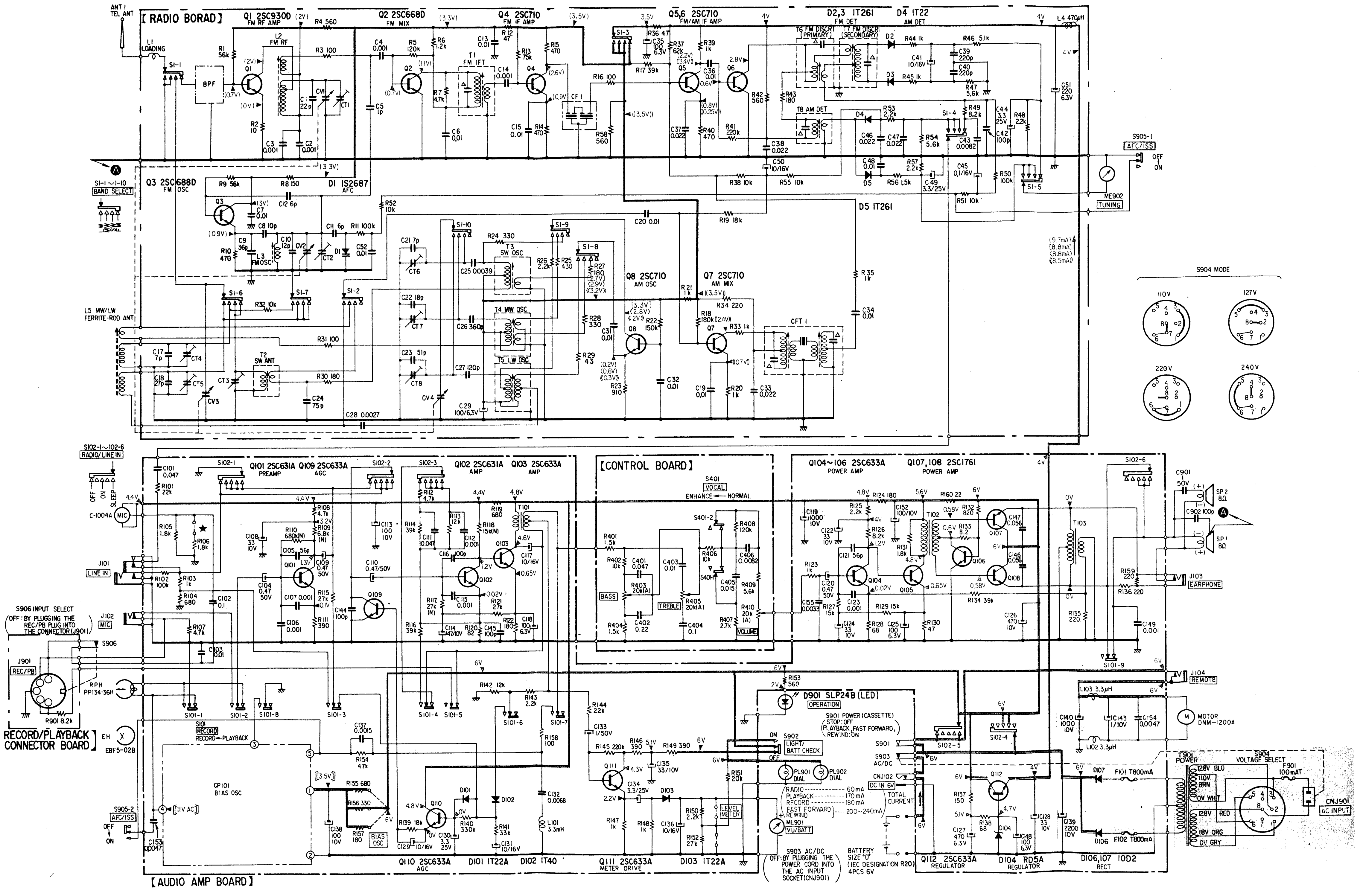
Note:

- All capacitors are in μF unless otherwise noted. pF = $\mu\mu$F 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ = 1000Ω, MΩ = 1000kΩ
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- ⏚ : chassis ground.
- (N) : low-noise capacitor and resistor.
- △ : internal component.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- ▬ : B+ bus.
- AC voltage readings indicated by in the bias oscillator circuit are taken with a VTVM.
- Readings are taken under detuned conditions with a VOM (20kΩ/V).

( ) : FM	≪ ≫ : LW
[ ] : SW	(( )) : SW/MW/LW
< > : MW	[[ ]] : record
no mark: FM/SW/MW/LW	

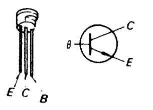
- Total current is measured with no cassette installed.
- In using an electret condenser microphone with a red mark on the side of the case, connect R106 shown by ★ in parallel with R105.
- Switch

Ref. No.	Switch	Position
S1	BAND SELECT	FM
S101	RECORD	PLAYBACK
S102	RADIO/LINE IN	OFF
S401	VOCAL	NORMAL
S901	POWER (CASSETTE)	OFF
S902	LIGHT/BATT CHECK	OFF
S903	AC/DC	DC
S904	VOLTAGE SELECT	------
S905	AFC/ISS	OFF
S906	INPUT SELECT	ON

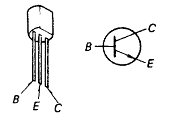

[RADIO BORAD]
Q1 2SC930D FM RF AMP
Q2 2SC668D FM MIX
Q4 2SC710 FM IF AMP
Q5,6 2SC710 FM/AM IF AMP
D2,3 1T261 FM DET
D4 1T22 AM DET
Q3 2SC668D FM OSC
D1 1S2687 AFC
D5 1T261
Q8 2SC710 AM OSC
Q7 2SC710 AM MIX
S1-1~1-10 BAND SELECT
L5 MW/LW FERRITE-ROD ANT
ANT1 TEL ANT
CF1
CFT1
S905-1 AFC/ISS
ME902 TUNING
S904 MODE
110V
127V
220V
240V
S102-1~102-6 RADIO/LINE IN
Q101 2SC631A PREAMP
Q109 2SC633A AGC
Q102 2SC631A AMP
Q103 2SC633A AMP
[CONTROL BOARD]
S401 VOCAL
ENHANCE ← → NORMAL
BASS
TREBLE
VOLUME
Q104~106 2SC633A POWER AMP
Q107,108 2SC1761 POWER AMP
C-1004A MIC
J101 LINE IN
S906 INPUT SELECT
(OFF: BY PLUGGING THE REC/PB PLUG INTO THE CONNECTOR (J901))
J102 MIC
J901 REC/PB
RPH PP134-36H
R901 8.2k
RECORD/PLAYBACK CONNECTOR BOARD
EH EBF5-02B
S905-2 AFC/ISS
OFF
ON
S101 RECORD
RECORD ← → PLAYBACK
GP101 BIAS OSC
Q110 2SC633A AGC
D101 1T22A
D102 1T40
Q111 2SC633A METER DRIVE
D103 1T22A
D901 SLP24B (LED) OPERATION
S902 LIGHT/BATT CHECK
S901 POWER (CASSETTE) STOP: OFF (PLAYBACK, FAST FORWARD, REWIND: ON)
S903 AC/DC
PL901 DIAL
PL902 DIAL
ME901 VU/BATT
LEVEL METER
RADIO 60mA
PLAYBACK 170mA
RECORD 180mA
FAST FORWARD, REWIND 200~240mA
TOTAL CURRENT
S903 AC/DC (OFF: BY PLUGGING THE POWER CORD INTO THE AC INPUT SOCKET (CNJ901))
BATTERY SIZE "D" (IEC DESIGNATION R20) 4PCS 6V
Q112 2SC633A REGULATOR
D104 RD5A REGULATOR
D106,107 10D2 RECT
[AUDIO AMP BOARD]
SP1 8Ω
SP2 8Ω
J103 EARPHONE
J104 REMOTE
M MOTOR DNM-1200A
T901 POWER
S904 VOLTAGE SELECT
F901 100mAT
F101 T800mA
F102 T800mA
CNJ901 AC INPUT

( ): Replacement Semiconductors

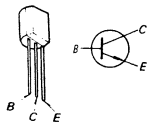
Q1: 2SC930D
Q2, 3: 2SC668D



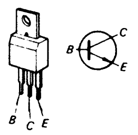
Q2, 3: (2SC1129)



Q4 ~ 8: 2SC710

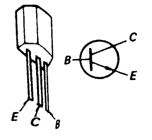


Q107, 108: 2SC1761
(2SC1760)



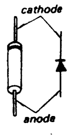
Q101, 102: 2SC631A
(2SC632A)

Q103 ~106, Q109 ~112: 2SC633A (2SC634A)

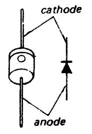


D1: 1S2687 (1S2687S)
D2, 3, 5: 1T261
D4: 1T22 (1T22A)

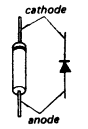
D101, 103: 1T22A
D102: 1T40 (1S1555)
D104: RD5A


cathode
anode

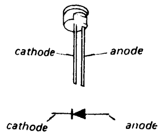
D106, 107: 10D2


cathode
anode

D106, 107: (10E2)


cathode
anode

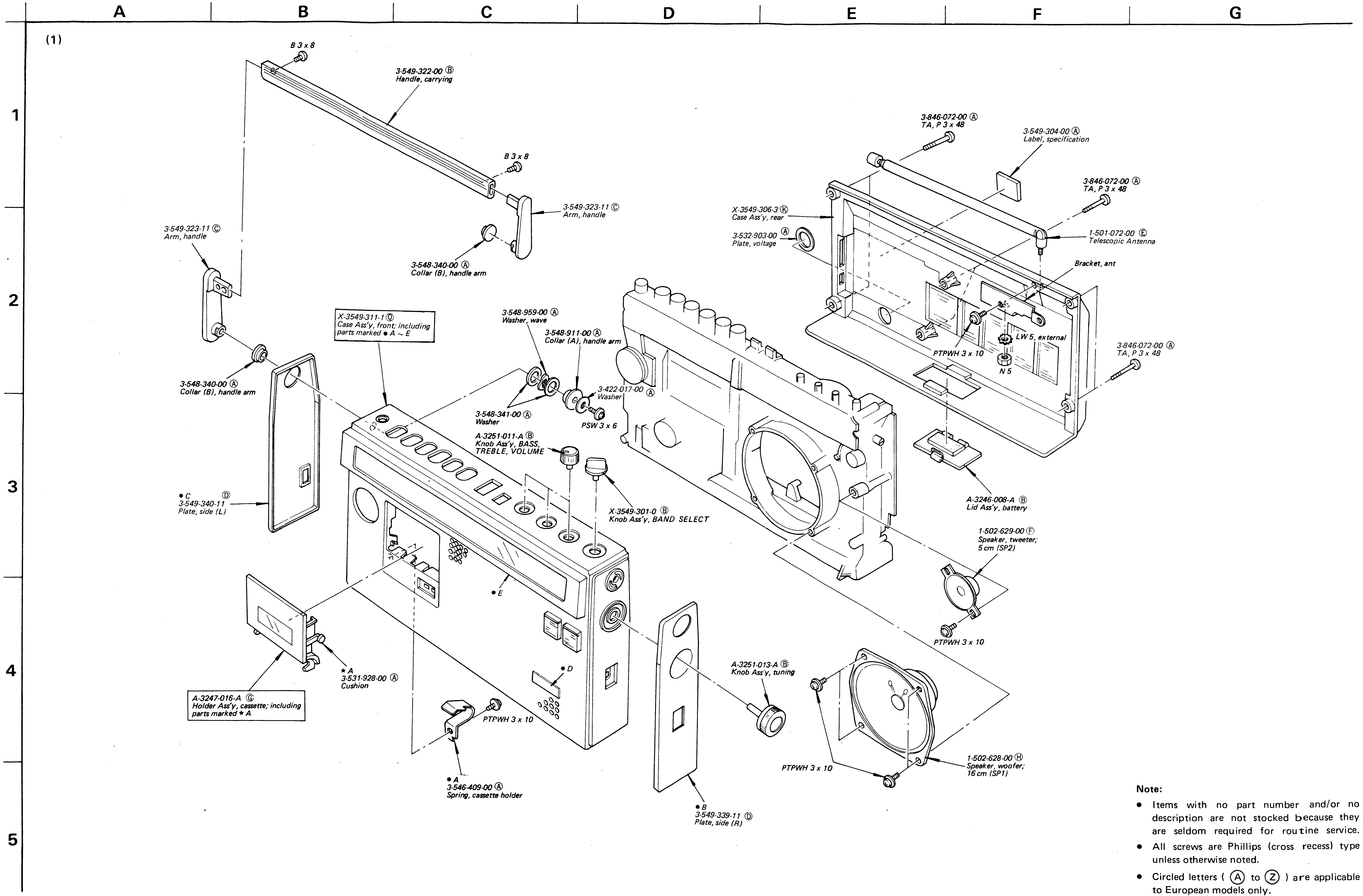
D901: SLP24B (LED)


cathode
anode
cathode
anode

SECTION 5

EXPLODED VIEWS

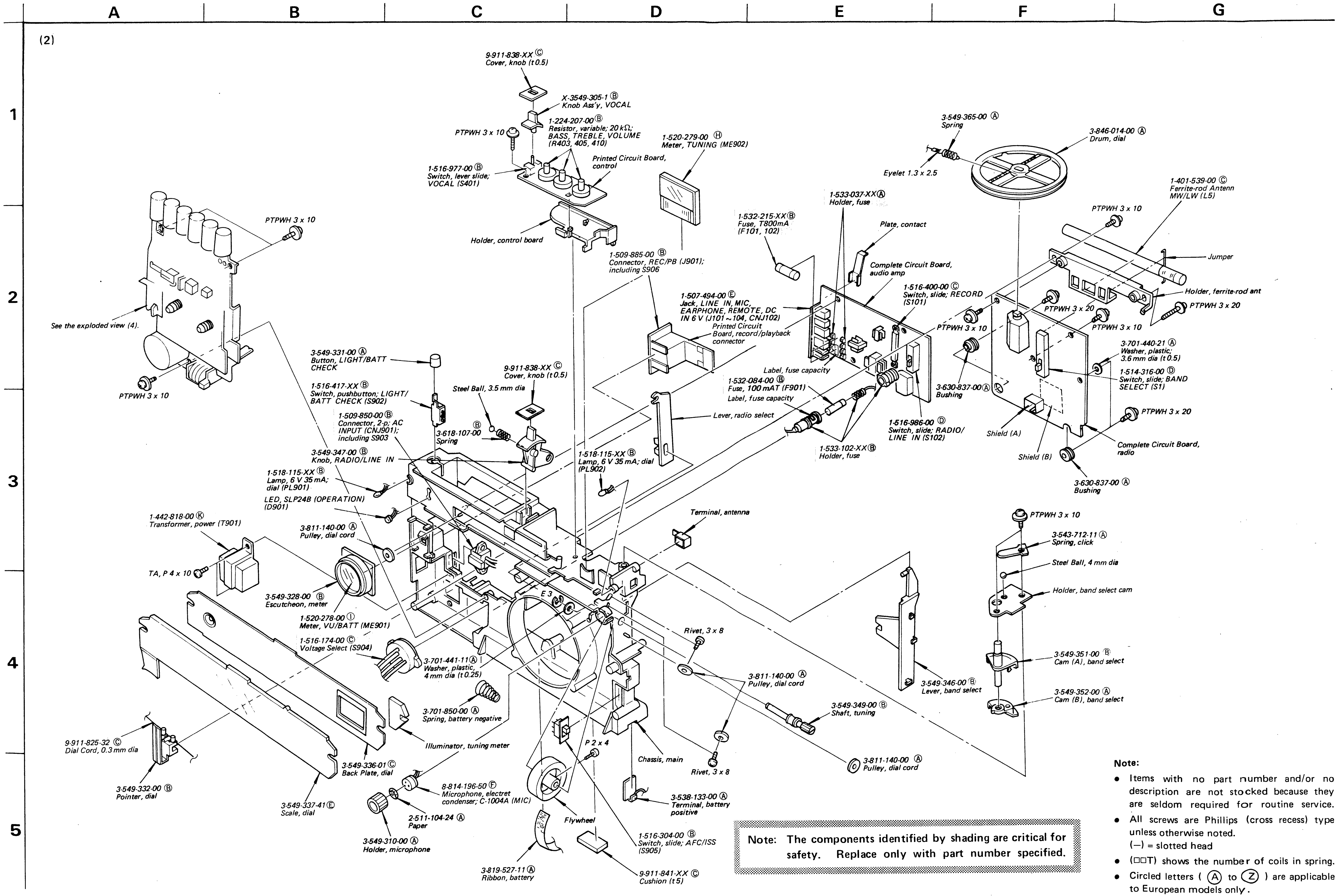
(1)


A
B
C
D
E
F
G
1
2
3
4
5
B 3 x 8
3-549-322-00 Ⓑ
Handle, carrying
B 3 x 8
3-549-323-11 Ⓒ
Arm, handle
3-548-340-00 Ⓐ
Collar (B), handle arm
3-549-323-11 Ⓒ
Arm, handle
3-548-340-00 Ⓐ
Collar (B), handle arm
X-3549-311-1 Ⓠ
Case Ass'y, front; including parts marked ● A ~ E
3-548-959-00 Ⓐ
Washer, wave
3-548-911-00 Ⓐ
Collar (A), handle arm
3-422-017-00 Ⓐ
Washer
3-548-341-00 Ⓐ
Washer
PSW 3 x 6
A-3251-011-A Ⓑ
Knob Ass'y, BASS, TREBLE, VOLUME
X-3549-301-0 Ⓑ
Knob Ass'y, BAND SELECT
● C
Ⓓ
3-549-340-11
Plate, side (L)
● E
● D
★ A
3-531-928-00 Ⓐ
Cushion
A-3247-016-A Ⓖ
Holder Ass'y, cassette; including parts marked ★ A
PTPWH 3 x 10
● A
3-546-409-00 Ⓐ
Spring, cassette holder
● B
3-549-339-11 Ⓓ
Plate, side (R)
A-3251-013-A Ⓑ
Knob Ass'y, tuning
PTPWH 3 x 10
1-502-628-00 Ⓗ
Speaker, woofer; 16 cm (SP1)
PTPWH 3 x 10
1-502-629-00 Ⓕ
Speaker, tweeter; 5 cm (SP2)
A-3246-008-A Ⓑ
Lid Ass'y, battery
3-846-072-00 Ⓐ
TA, P 3 x 48
3-549-304-00 Ⓐ
Label, specification
3-846-072-00 Ⓐ
TA, P 3 x 48
X-3549-306-3 Ⓚ
Case Ass'y, rear
3-532-903-00 Ⓐ
Plate, voltage
1-501-072-00 Ⓔ
Telescopic Antenna
Bracket, ant
PTPWH 3 x 10
LW 5, external
N 5
3-846-072-00 Ⓐ
TA, P 3 x 48

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

(2)

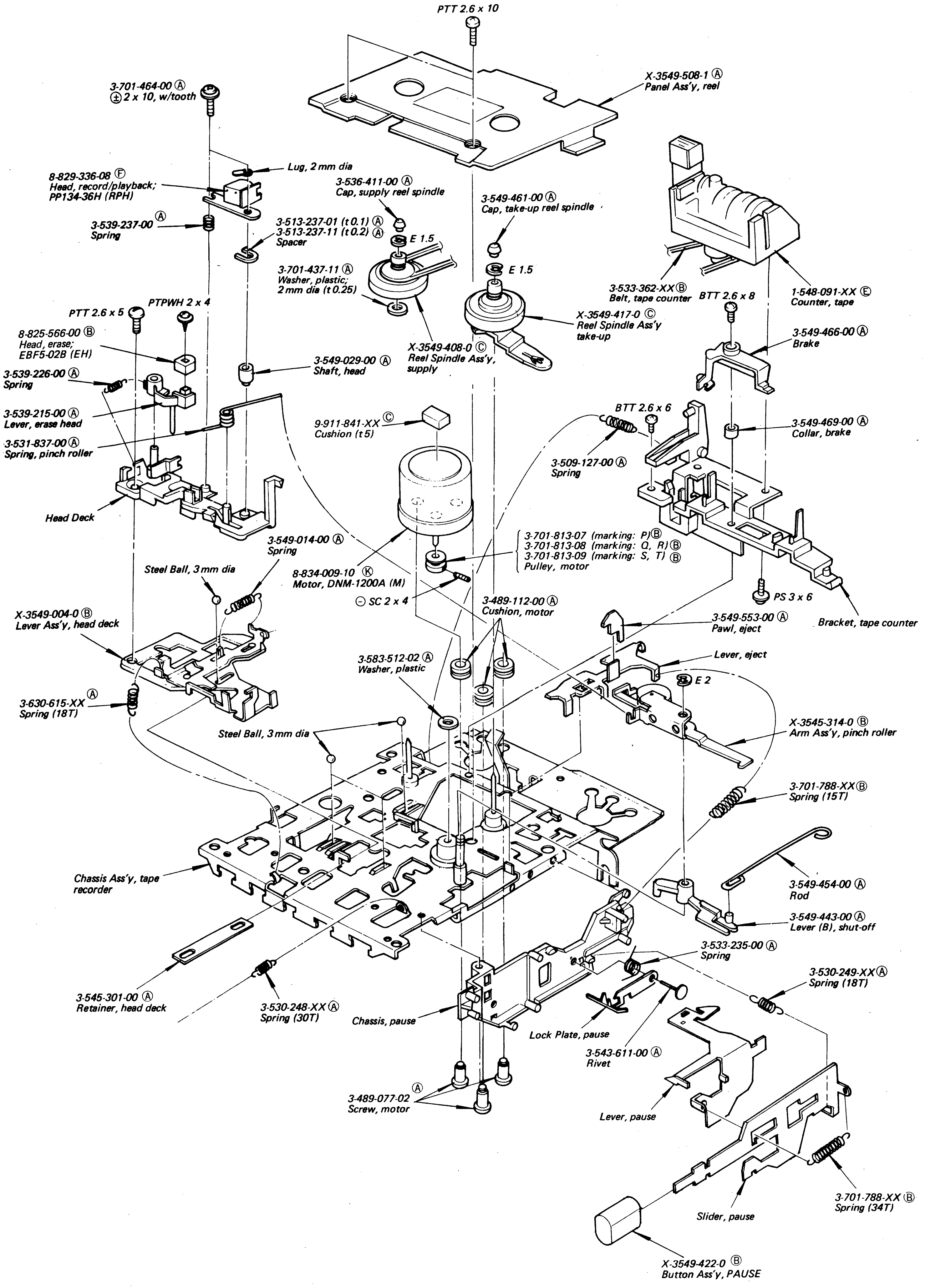

A
B
C
D
E
F
G
1
2
3
4
5
9-911-838-XX Ⓒ Cover, knob (t 0.5)
X-3549-305-1 Ⓑ Knob Ass'y, VOCAL
1-224-207-00 Ⓑ Resistor, variable; 20 kΩ; BASS, TREBLE, VOLUME (R403, 405, 410)
PTPWH 3 x 10
1-516-977-00 Ⓑ Switch, lever slide; VOCAL (S401)
Printed Circuit Board, control
Holder, control board
1-520-279-00 Ⓗ Meter, TUNING (ME902)
1-509-885-00 Ⓑ Connector, REC/PB (J901); including S906
1-507-494-00 Ⓔ Jack, LINE IN, MIC, EARPHONE, REMOTE, DC IN 6 V (J101 ~ 104, CNJ102)
Printed Circuit Board, record/playback connector
PTPWH 3 x 10
See the exploded view (4).
PTPWH 3 x 10
3-549-331-00 Ⓐ Button, LIGHT/BATT CHECK
1-516-417-XX Ⓑ Switch, pushbutton; LIGHT/ BATT CHECK (S902)
1-509-850-00 Ⓑ Connector, 2-p; AC INPUT (CNJ901); including S903
9-911-838-XX Ⓒ Cover, knob (t 0.5)
Steel Ball, 3.5 mm dia
Ⓑ 3-618-107-00 Spring
3-549-347-00 Ⓑ Knob, RADIO/LINE IN
1-518-115-XX Ⓑ Lamp, 6 V 35 mA; dial (PL901)
LED, SLP24B (OPERATION) (D901)
1-518-115-XX Ⓑ Lamp, 6 V 35 mA; dial (PL902)
Lever, radio select
1-442-818-00 Ⓚ Transformer, power (T901)
TA, P 4 x 10
3-811-140-00 Ⓐ Pulley, dial cord
3-549-328-00 Ⓑ Escutcheon, meter
1-520-278-00 Ⓘ Meter, VU/BATT (ME901)
1-516-174-00 Ⓒ Voltage Select (S904)
3-701-441-11 Ⓐ Washer, plastic, 4 mm dia (t 0.25)
3-701-850-00 Ⓐ Spring, battery negative
Illuminator, tuning meter
E 3
Terminal, antenna
Rivet, 3 x 8
3-811-140-00 Ⓐ Pulley, dial cord
3-549-349-00 Ⓑ Shaft, tuning
Rivet, 3 x 8
3-811-140-00 Ⓐ Pulley, dial cord
Chassis, main
P 2 x 4
3-538-133-00 Ⓐ Terminal, battery positive
1-516-304-00 Ⓑ Switch, slide; AFC/ISS (S905)
Flywheel
9-911-841-XX Ⓒ Cushion (t 5)
3-819-527-11 Ⓐ Ribbon, battery
9-911-825-32 Ⓒ Dial Cord, 0.3 mm dia
3-549-332-00 Ⓑ Pointer, dial
3-549-337-41 Ⓔ Scale, dial
3-549-336-01 Ⓒ Back Plate, dial
8-814-196-50 Ⓕ Microphone, electret condenser; C-1004A (MIC)
2-511-104-24 Ⓐ Paper
3-549-310-00 Ⓐ Holder, microphone
1-532-215-XX Ⓑ Fuse, T800mA (F101, 102)
1-533-037-XX Ⓐ Holder, fuse
Plate, contact
Complete Circuit Board, audio amp
1-516-400-00 Ⓒ Switch, slide; RECORD (S101)
PTPWH 3 x 10
Label, fuse capacity
1-532-084-00 Ⓑ Fuse, 100 mAT (F901)
Label, fuse capacity
1-533-102-XX Ⓑ Holder, fuse
1-516-986-00 Ⓓ Switch, slide; RADIO/ LINE IN (S102)
3-630-837-00 Ⓐ Bushing
3-549-365-00 Ⓐ Spring
Eyelet 1.3 x 2.5
3-846-014-00 Ⓐ Drum, dial
1-401-539-00 Ⓒ Ferrite-rod Antenn MW/LW (L5)
PTPWH 3 x 10
Jumper
Holder, ferrite-rod ant
PTPWH 3 x 20
PTPWH 3 x 20
PTPWH 3 x 10
3-701-440-21 Ⓐ Washer, plastic; 3.6 mm dia (t 0.5)
1-514-316-00 Ⓓ Switch, slide; BAND SELECT (S1)
PTPWH 3 x 20
Shield (A)
Shield (B)
Complete Circuit Board, radio
3-630-837-00 Ⓐ Bushing
PTPWH 3 x 10
3-543-712-11 Ⓐ Spring, click
Steel Ball, 4 mm dia
Holder, band select cam
3-549-351-00 Ⓑ Cam (A), band select
3-549-352-00 Ⓐ Cam (B), band select
3-549-346-00 Ⓑ Lever, band select

Note: The components identified by shading are critical for safety. Replace only with part number specified.

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

(3)


A
B
C
D
E
1
2
3
4
5
6
7
PTT 2.6 x 10
X-3549-508-1 Ⓐ
Panel Ass'y, reel
3-701-464-00 Ⓐ
⊕ 2 x 10, w/tooth
Lug, 2 mm dia
8-829-336-08 Ⓕ
Head, record/playback;
PP134-36H (RPH)
3-536-411-00 Ⓐ
Cap, supply reel spindle
3-549-461-00 Ⓐ
Cap, take-up reel spindle
3-539-237-00 Ⓐ
Spring
3-513-237-01 (t 0.1) Ⓐ
3-513-237-11 (t 0.2) Ⓐ
Spacer
E 1.5
E 1.5
3-701-437-11 Ⓐ
Washer, plastic;
2 mm dia (t 0.25)
3-533-362-XX Ⓑ
Belt, tape counter
BTT 2.6 x 8
1-548-091-XX Ⓔ
Counter, tape
PTPWH 2 x 4
PTT 2.6 x 5
X-3549-417-0 Ⓒ
Reel Spindle Ass'y
take-up
8-825-566-00 Ⓑ
Head, erase;
EBF5-02B (EH)
3-549-466-00 Ⓐ
Brake
3-539-226-00 Ⓐ
Spring
3-549-029-00 Ⓐ
Shaft, head
X-3549-408-0 Ⓒ
Reel Spindle Ass'y,
supply
BTT 2.6 x 6
3-539-215-00 Ⓐ
Lever, erase head
9-911-841-XX Ⓒ
Cushion (t 5)
3-549-469-00 Ⓐ
Collar, brake
3-531-837-00 Ⓐ
Spring, pinch roller
3-509-127-00 Ⓐ
Spring
Head Deck
3-701-813-07 (marking: P) Ⓑ
3-701-813-08 (marking: Q, R) Ⓑ
3-701-813-09 (marking: S, T) Ⓑ
Pulley, motor
3-549-014-00 Ⓐ
Spring
Steel Ball, 3 mm dia
8-834-009-10 Ⓚ
Motor, DNM-1200A (M)
PS 3 x 6
⊖ SC 2 x 4
3-489-112-00 Ⓐ
Cushion, motor
X-3549-004-0 Ⓑ
Lever Ass'y, head deck
3-549-553-00 Ⓐ
Pawl, eject
Bracket, tape counter
Lever, eject
3-583-512-02 Ⓐ
Washer, plastic
E 2
3-630-615-XX Ⓐ
Spring (18T)
X-3545-314-0 Ⓑ
Arm Ass'y, pinch roller
Steel Ball, 3 mm dia
3-701-788-XX Ⓑ
Spring (15T)
Chassis Ass'y, tape
recorder
3-549-454-00 Ⓐ
Rod
3-549-443-00 Ⓐ
Lever (B), shut-off
3-533-235-00 Ⓐ
Spring
3-530-249-XX Ⓐ
Spring (18T)
3-545-301-00 Ⓐ
Retainer, head deck
3-530-248-XX Ⓐ
Spring (30T)
Chassis, pause
Lock Plate, pause
3-543-611-00 Ⓐ
Rivet
3-489-077-02 Ⓐ
Screw, motor
Lever, pause
3-701-788-XX Ⓑ
Spring (34T)
Slider, pause
X-3549-422-0 Ⓑ
Button Ass'y, PAUSE

Note:

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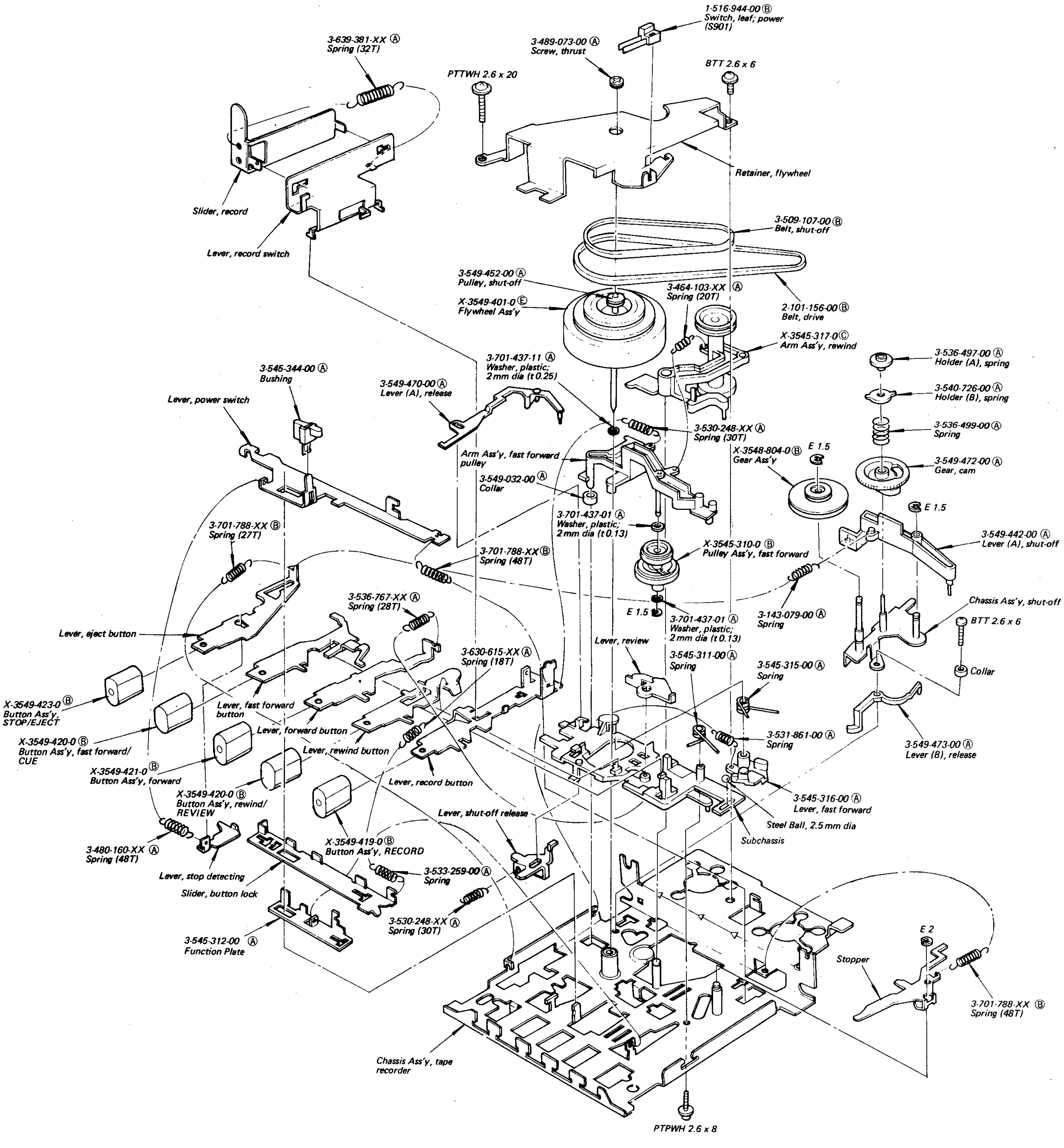
(4)


3-639-381-XX Ⓐ
Spring (32T)
Slider, record
Lever, record switch
PTTWH 2.6 x 20
3-489-073-00 Ⓐ
Screw, thrust
1-516-944-00 Ⓑ
Switch, leaf; power
(S901)
BTT 2.6 x 6
Retainer, flywheel
3-509-107-00 Ⓑ
Belt, shut-off
3-549-452-00 Ⓐ
Pulley, shut-off
X-3549-401-0 Ⓔ
Flywheel Ass'y
3-464-103-XX Ⓐ
Spring (20T)
2-101-156-00 Ⓑ
Belt, drive
X-3545-317-0 Ⓒ
Arm Ass'y, rewind
3-536-497-00 Ⓐ
Holder (A), spring
3-540-726-00 Ⓐ
Holder (B), spring
3-536-499-00 Ⓐ
Spring
3-549-472-00 Ⓐ
Gear, cam
3-545-344-00 Ⓐ
Bushing
Lever, power switch
3-549-470-00 Ⓐ
Lever (A), release
3-701-437-11 Ⓐ
Washer, plastic;
2 mm dia (t 0.25)
3-530-248-XX Ⓐ
Spring (30T)
X-3548-804-0 Ⓑ
Gear Ass'y
E 1.5
Arm Ass'y, fast forward
pulley
3-549-032-00 Ⓐ
Collar
E 1.5
3-701-437-01 Ⓐ
Washer, plastic;
2 mm dia (t 0.13)
3-549-442-00 Ⓐ
Lever (A), shut-off
3-701-788-XX Ⓑ
Spring (27T)
3-701-788-XX Ⓑ
Spring (48T)
X-3545-310-0 Ⓑ
Pulley Ass'y, fast forward
3-143-079-00 Ⓐ
Spring
Chassis Ass'y, shut-off
BTT 2.6 x 6
3-536-767-XX Ⓐ
Spring (28T)
E 1.5
3-701-437-01 Ⓐ
Washer, plastic;
2 mm dia (t 0.13)
Lever, eject button
Lever, review
3-630-615-XX Ⓐ
Spring (18T)
3-545-311-00 Ⓐ
Spring
3-545-315-00 Ⓐ
Spring
Collar
X-3549-423-0 Ⓑ
Button Ass'y,
STOP/EJECT
Lever, fast forward
button
Lever, forward button
X-3549-420-0 Ⓑ
Button Ass'y, fast forward/
CUE
Lever, rewind button
3-531-861-00 Ⓐ
Spring
3-549-473-00 Ⓐ
Lever (B), release
X-3549-421-0 Ⓑ
Button Ass'y, forward
Lever, record button
X-3549-420-0 Ⓑ
Button Ass'y, rewind/
REVIEW
3-545-316-00 Ⓐ
Lever, fast forward
Lever, shut-off release
Steel Ball, 2.5 mm dia
Subchassis
3-480-160-XX Ⓐ
Spring (48T)
X-3549-419-0 Ⓑ
Button Ass'y, RECORD
Lever, stop detecting
3-533-259-00 Ⓐ
Spring
Slider, button lock
3-530-248-XX Ⓐ
Spring (30T)
3-545-312-00 Ⓐ
Function Plate
E 2
Stopper
3-701-788-XX Ⓑ
Spring (48T)
Chassis Ass'y, tape
recorder
PTPWH 2.6 x 8

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

SECTION 6

ELECTRICAL PARTS LIST

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

SEMICONDUCTORS

Transistors

Ref. No.	Part No.	Description
Q1		Ⓑ 2SC930D
⇒Q2, 3		Ⓑ 2SC1129
Q4 ~ 8		Ⓑ 2SC710
⇒Q101, 102		Ⓑ 2SC632A
⇒Q103 ~ 106		Ⓑ 2SC634A
⇒Q107, 108		Ⓒ 2SC1760
⇒Q109 ~ 112		Ⓑ 2SC634A

Diodes

Ref. No.	Part No.	Description
⇒D1		Ⓑ 1S2687S
D2, 3		Ⓐ 1T261
⇒D4		Ⓐ 1T22A
D5		Ⓐ 1T261
D101		Ⓐ 1T22A
⇒D102		Ⓑ 1S1555
D103		Ⓐ 1T22A
D104		Ⓑ RD5A
⇒D106, 107		Ⓑ 10E2
D901		Ⓒ SLP24B (LED)

COILS

Ref. No.	Part No.	Description
L2	1-425-632-00	Ⓑ FM RF
L3	1-459-157-00	Ⓑ FM OSC
L4	1-407-661-XX	Ⓐ 470μH, microinductor
L5	1-401-539-00	Ⓒ MW/LW Ferrite-rod Ant
L101	1-407-200-XX	Ⓐ 3.3 mH, microinductor
L102, 103	1-407-484-11	Ⓐ 3.3μH, microinductor

TRANSFORMERS

Ref. No.	Part No.	Description
CFT1	1-403-144-00	Ⓒ AM IFT
T1	1-403-872-00	Ⓑ FM IFT
T2	1-401-538-00	Ⓑ SW Ant
T3	1-405-593-00	Ⓑ SW Osc
T4	1-405-301-00	Ⓑ MW Osc
T5	1-405-594-00	Ⓑ LW Osc
T6	1-403-952-00	Ⓑ FM Discriminator (primary)
T7	1-403-953-00	Ⓑ FM Discriminator (secondary)
T8	1-404-041-00	Ⓑ AM Detector
T101	1-423-049-XX	Ⓑ Input
T102	1-423-218-00	Ⓒ Input
T103	1-427-306-XX	Ⓑ Output
T901	1-442-818-00	Ⓚ Power

CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted.
50WV or less are not indicated except for electrolytics.
(pF = μμF, elect = electrolytic)

Ref. No.	Part No.	Description		
C1	1-102-959-11	Ⓐ 22p		
C2 ~ 4	1-101-918-11	Ⓐ 0.001		
C5	1-102-934-11	Ⓐ 1p		
C6, 7	1-101-923-11	Ⓐ 0.01		
C8	1-102-947-11	Ⓐ 10p		
C9	1-102-964-11	Ⓐ 36p		
C10	1-102-949-11	Ⓐ 12p		
C11, 12	1-102-808-11	Ⓐ 6p		
C13	1-101-923-11	Ⓐ 0.01		
C14	1-101-918-11	Ⓐ 0.001		
C15	1-101-923-11	Ⓐ 0.01		
C17	1-102-809-11	Ⓐ 7p		
C18	1-102-961-11	Ⓐ 27p		
C19	1-161-013-11	Ⓐ 0.01	(boundary layer)	
C20	1-101-923-11	Ⓐ 0.01		
C21	1-102-809-11	Ⓐ 7p		
C22	1-102-953-11	Ⓐ 18p		
C23	1-101-882-11	Ⓐ 51p		
C24	1-101-890-11	Ⓐ 75p		
C25	1-108-799-12	Ⓐ 0.0039		mylar
C26	1-107-231-11	Ⓐ 360p		silvered mica
C27	1-107-087-11	Ⓐ 120p		silvered mica
C28	1-108-797-12	Ⓐ 0.0027		mylar
C29	1-121-413-11	Ⓐ 100	6.3 V	elect
C31	1-101-923-11	Ⓐ 0.01		
C32	1-161-013-11	Ⓐ 0.01	(boundary layer)	
C33	1-101-924-11	Ⓐ 0.022		
C34	1-101-923-11	Ⓐ 0.01		
C35	1-121-413-11	Ⓐ 100	6.3 V	elect
C36	1-101-923-11	Ⓐ 0.01		
C37, 38	1-101-924-11	Ⓐ 0.022		
C39, 40	1-102-978-11	Ⓐ 220p		
C41	1-121-651-11	Ⓐ 10	16 V	elect
C42	1-102-106-11	Ⓐ 100p		
C43	1-161-012-11	Ⓐ 0.0082	(boundary layer)	
C44	1-121-392-11	Ⓐ 3.3	25 V	elect
C45	1-127-045-11	Ⓐ 0.1	16 V	solid aluminum
C46, 47	1-161-017-11	Ⓐ 0.022	(boundary layer)	
C48	1-101-923-11	Ⓐ 0.01		
C49	1-121-392-11	Ⓐ 3.3	25 V	elect
C50	1-121-651-11	Ⓐ 10	16 V	elect
C51	1-121-419-11	Ⓐ 220	6.3 V	elect
C52	1-101-923-11	Ⓐ 0.01		
C101	1-161-021-11	Ⓐ 0.047	(boundary layer)	
C102	1-161-025-11	Ⓑ 0.1	(boundary layer)	
C103	1-161-013-11	Ⓐ 0.01	(boundary layer)	
C104	1-121-726-11	Ⓐ 0.47	50V	elect
C105	1-101-885-11	Ⓐ 56p		
C106, 107	1-161-001-11	Ⓐ 0.001	(boundary layer)	
C108	1-121-402-11	Ⓐ 33	10V	elect
C109, 110	1-121-726-11	Ⓐ 0.47	50V	elect
C111	1-108-812-12	Ⓑ 0.047		mylar
C112	1-161-001-11	Ⓐ 0.001	(boundary layer)	
C113	1-121-414-11	Ⓐ 100	10V	elect
C114	1-121-352-11	Ⓐ 47	10V	elect
C115	1-161-001-11	Ⓐ 0.001	(boundary layer)	
C116	1-102-106-11	Ⓐ 100p		
C117	1-121-651-11	Ⓐ 10	16 V	elect
C118	1-121-413-11	Ⓐ 100	6.3 V	elect
C119	1-121-943-11	Ⓑ 1000	10V	elect
C120	1-121-726-11	Ⓐ 0.47	50V	elect
C121	1-101-885-11	Ⓐ 56p		
C122	1-121-402-11	Ⓐ 33	10V	elect
C123	1-161-001-11	Ⓐ 0.001	(boundary layer)	
C124	1-121-402-11	Ⓐ 33	10V	elect
C125	1-121-413-11	Ⓐ 100	6.3 V	elect
C126	1-121-425-11	Ⓑ 470	10V	elect
C127	1-121-424-11	Ⓑ 470	6.3 V	elect
C128	1-121-402-11	Ⓐ 33	10V	elect
C129	1-121-651-11	Ⓐ 10	16 V	elect
C130	1-121-392-11	Ⓐ 3.3	25 V	elect
C131	1-121-651-11	Ⓐ 10	16 V	elect
C132	1-108-575-12	Ⓑ 0.0068		mylar
C133	1-121-391-11	Ⓐ 1	50V	elect
C134	1-121-392-11	Ⓐ 3.3	25 V	elect
C135	1-121-402-11	Ⓐ 33	10V	elect
C136	1-121-651-11	Ⓐ 10	16 V	elect
C137	1-108-794-12	Ⓐ 0.0015		mylar
C138	1-121-414-11	Ⓐ 100	10V	elect
C139	1-123-074-11	Ⓑ 2200	10V	elect
C140	1-121-943-11	Ⓑ 1000	10V	elect
C143	1-127-049-11	Ⓑ 1	10V	solid aluminum
C144, 145	1-102-106-11	Ⓐ 100p		
C146, 147	1-161-022-11	Ⓐ 0.056	(boundary layer)	
C148	1-121-413-11	Ⓐ 100	6.3 V	elect
C149	1-161-001-11	Ⓐ 0.001	(boundary layer)	
C152	1-121-414-11	Ⓐ 100	10V	elect
C153	1-108-622-12	Ⓐ 0.0047		mylar
C154	1-101-922-11	Ⓐ 0.0047		
C155	1-102-123-11	Ⓐ 0.0033		
C401	1-108-845-12	Ⓐ 0.047		mylar
C402	1-108-853-12	Ⓑ 0.22		mylar
C403	1-108-837-12	Ⓐ 0.01		mylar
C404	1-108-849-12	Ⓑ 0.1		mylar
C405	1-108-839-12	Ⓐ 0.015		mylar
C406	1-108-836-12	Ⓐ 0.0082		mylar
C901	1-123-228-11	Ⓑ 1	50V	elect
C902	1-102-106-11	Ⓐ 100p		
CT1 ~ 4	1-141-147-XX	Ⓐ Trimmer		
CT5	1-141-180-00	Ⓑ Trimmer		
CT6, 7	1-141-147-XX	Ⓐ Trimmer		
CT8	1-141-180-00	Ⓑ Trimmer		

⇒ : Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading are critical for safety. Replace only with part number specified.

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

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Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	*Part No.*	*Description*
CV1 ~ 4	1-151-196-00	Ⓒ Tuning

RESISTORS

Common ¼W carbon resistors are omitted. Check schematic diagram for values.

Ref. No.	*Part No.*	*Description*
R403, 405 R410	1-224-207-00	Ⓑ 20kΩ, variable; BASS, TREBLE, VOLUME

SWITCHES

Ref. No.	*Part No.*	*Description*
S1	1-514-316-00	Ⓓ Slide, BAND SELECT
S101	1-516-400-00	Ⓒ Slide, RECORD
S102	1-516-986-00	Ⓓ Slide, RADIO/LINE IN
S401	1-516-977-00	Ⓑ Lever Slide, VOCAL
S901	1-516-944-00	Ⓑ Leaf, power
S902	1-516-417-XX	Ⓑ Pushbutton, LIGHT/BATT CHECK
S903	————	Included in CNJ901
S904	1-516-174-00	Ⓒ Voltage Select
S905	1-516-304-00	Ⓑ Slide, AFC/ISS
S906	————	Included in J901

JACKS

Ref. No.	*Part No.*	*Description*
CNJ901	1-509-850-00	Ⓑ Connector, 2-p; AC INPUT; including S903
J101~104 CNJ102	1-507-494-00	Ⓔ MIC, REMOTE, LINE IN, EARPHONE, DC IN 6V
J901	1-509-885-00	Ⓑ Connector, REC/PB; including S906

MISCELLANEOUS

Ref. No.	*Part No.*	*Description*
ANT1	1-501-072-00	Ⓔ Telescopic Antenna
BPF	1-231-286-00	Ⓑ Filter, band-pass
CF1	1-527-184-XX	Ⓑ Filter, ceramic; 10.7MHz
CP101	1-464-007-00	Ⓔ Unit, bias osc
EH	8-825-566-00	Ⓑ Head, erase; EBF5-02B

Ref. No.	*Part No.*	*Description*
F101, 102	1-532-215-00	Ⓑ Fuse, T800mA
F901	1-532-084-00	Ⓑ Fuse, 100mAT
M	8-834-009-10	Ⓚ Motor, DNM-1200A
ME901	1-520-278-00	Ⓘ Meter, VU/BATT
ME902	1-520-279-00	Ⓗ Meter, TUNING
MIC	8-814-196-50	Ⓕ Microphone, electret condenser; C-1004A
PL901, 902	1-518-115-XX	Ⓑ Lamp, 6V 35mA; dial
RPH	8-829-336-08	Ⓕ Head, record/playback; PP134-36H
SP1	1-502-628-00	Ⓗ Speaker, woofer (16cm)
SP2	1-502-629-00	Ⓕ Speaker, tweeter (5cm)
	1-533-037-XX	Ⓐ Holder, fuse
	1-533-102-XX	Ⓑ Holder, fuse

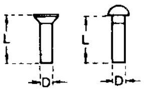
ACCESSORIES & PACKING MATERIALS

Part No.	*Description*
X-3701-018-2	Ⓐ Tips Ass'y, head cleaning
1-504-059-11	Ⓒ Earphone, ME-20H
1-506-309-00	Ⓐ Plug, shorting; SP-100
1-534-840-XX	Ⓔ Cord, power; DK-38
3-548-413-00	Ⓑ Bag, protection; set
3-549-363-00	Ⓑ Cushion, right
3-549-364-00	Ⓑ Cushion, left
3-549-390-00	Ⓔ Carton
3-770-203-11	Ⓒ Manual, instruction
3-793-455-00	Ⓐ Tag, caution
3-793-828-11	Ⓐ Card, caution; cassette
8-893-506-00	Ⓕ Tape, demonstration; CD-803

Note: The components identified by shading are critical for safety. Replace only with part number specified.

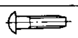
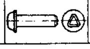
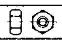
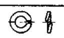
HARDWARE NOMENCLATURE

Screw: — P 3 x 10
L: *Length in mm*
D: *Diameter in mm*
Type of head
Indicated slotted-head only.
Unless otherwise indicated, it means
cross-recessed head (Phillips type).



Nut, Washer, Retaining ring:
N 3
Diameter of usable screw or shaft
Reference designation

Reference Designation	Shape	Description	Remarks
		SCREWS	
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
		SELF-TAPPING SCREWS	
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
		SET SCREWS	
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
		NUT	
N		nut	
		WASHERS	
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
		RETAINING RINGS	
E		retaining ring	
G		grip-type retaining ring	

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FM/SW/MW/LW CASSETTE-CORDER

CF-470L

SUPPLEMENT

UK Model
AEP Model

No. 1
August, 1977

This supplement updates the service manual to include production changes. File this supplement with the service manual.

ADDITIONAL PARTS

Part No.	*Description*		*Page*
A-3247-016-A	Holder Ass'y, cassette (black)	(UK Model)	19
A-3247-018-A	Holder Ass'y, cassette (silver)	(AEP Model)	19
X-3549-311-3	Case Ass'y, front (silver)	(AEP Model)	19
X-3549-312-3	Case Ass'y, front (black)	(UK Model)	19
3-549-336-11	Back Plate, dial (silver)	(UK, AEP Model)	21
3-549-339-11	Plate, side (R) (black)	(UK Model)	20
3-549-339-21	Plate, side (R) (silver)	(AEP Model)	20
3-549-340-21	Plate, side (L) (black)	(UK Model)	19
3-549-340-31	Plate, side (L) (silver)	(AEP Model)	20

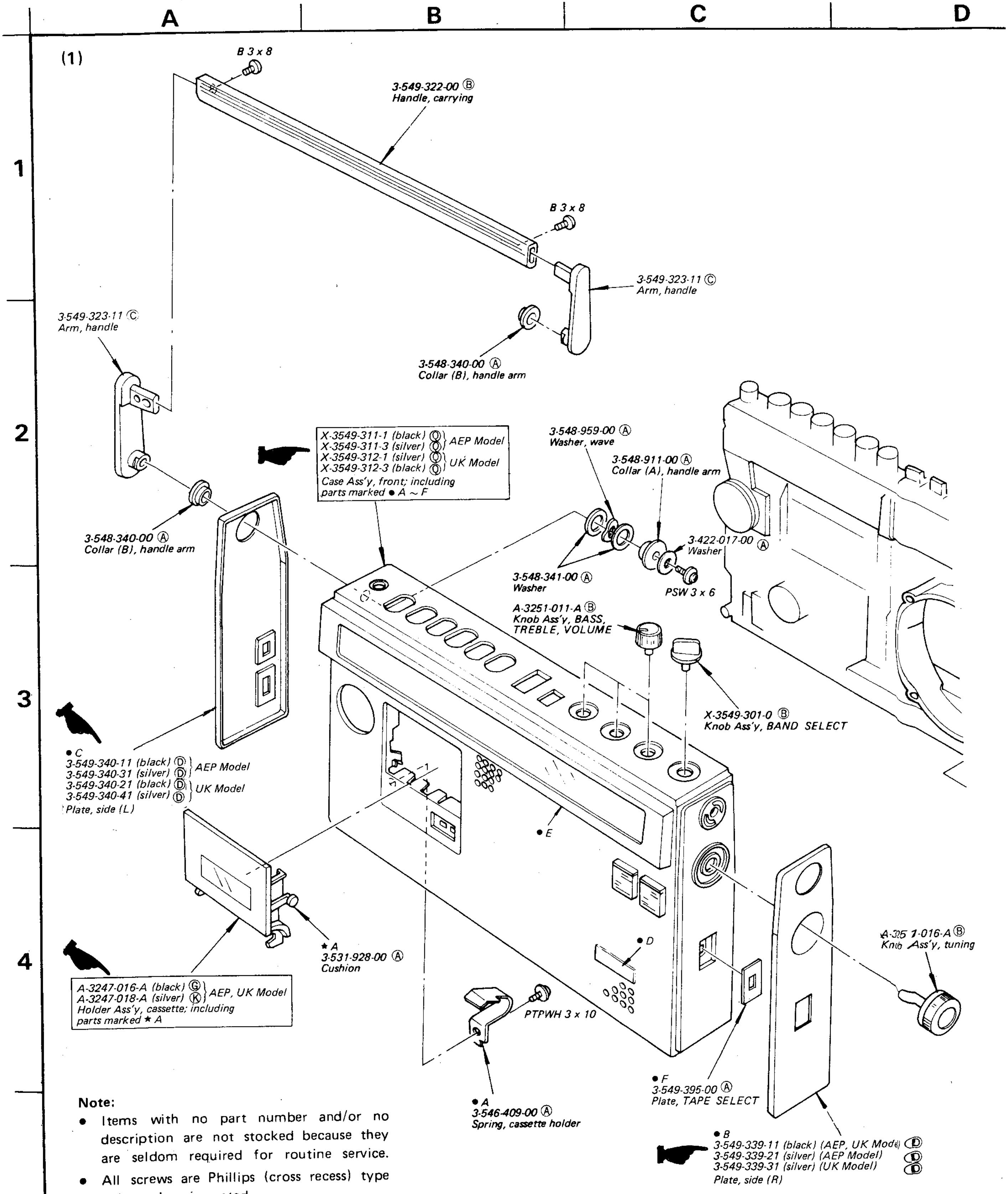
SONY®
SERVICE MANUAL

: ADDITIONAL PARTS PORTION

page 19 of the Service Manual.

EXPLODED VIEWS

page 20 of the Service Manual.


A
B
C
D
1
2
3
4
5
(1)
B 3 x 8
3-549-322-00 Ⓑ
Handle, carrying
B 3 x 8
3-549-323-11 Ⓒ
Arm, handle
3-549-323-11 Ⓒ
Arm, handle
3-548-340-00 Ⓐ
Collar (B), handle arm
X-3549-311-1 (black) Ⓠ } AEP Model
X-3549-311-3 (silver) Ⓠ
X-3549-312-1 (silver) Ⓠ } UK Model
X-3549-312-3 (black) Ⓠ
Case Ass'y, front; including parts marked ● A ~ F
3-548-959-00 Ⓐ
Washer, wave
3-548-911-00 Ⓐ
Collar (A), handle arm
3-548-340-00 Ⓐ
Collar (B), handle arm
3-422-017-00 Ⓐ
Washer
3-548-341-00 Ⓐ
Washer
PSW 3 x 6
A-3251-011-A Ⓑ
Knob Ass'y, BASS, TREBLE, VOLUME
X-3549-301-0 Ⓑ
Knob Ass'y, BAND SELECT
● C
3-549-340-11 (black) Ⓓ } AEP Model
3-549-340-31 (silver) Ⓓ
3-549-340-21 (black) Ⓓ } UK Model
3-549-340-41 (silver) Ⓓ
Plate, side (L)
● E
★ A
3-531-928-00 Ⓐ
Cushion
● D
A-3251-016-A Ⓑ
Knob Ass'y, tuning
A-3247-016-A (black) Ⓖ } AEP, UK Model
A-3247-018-A (silver) Ⓚ
Holder Ass'y, cassette; including parts marked ★ A
PTPWH 3 x 10
● F
3-549-395-00 Ⓐ
Plate, TAPE SELECT
● A
3-546-409-00 Ⓐ
Spring, cassette holder
● B
3-549-339-11 (black) (AEP, UK Model) Ⓓ
3-549-339-21 (silver) (AEP Model) Ⓓ
3-549-339-31 (silver) (UK Model) Ⓓ
Plate, side (R)

Note:

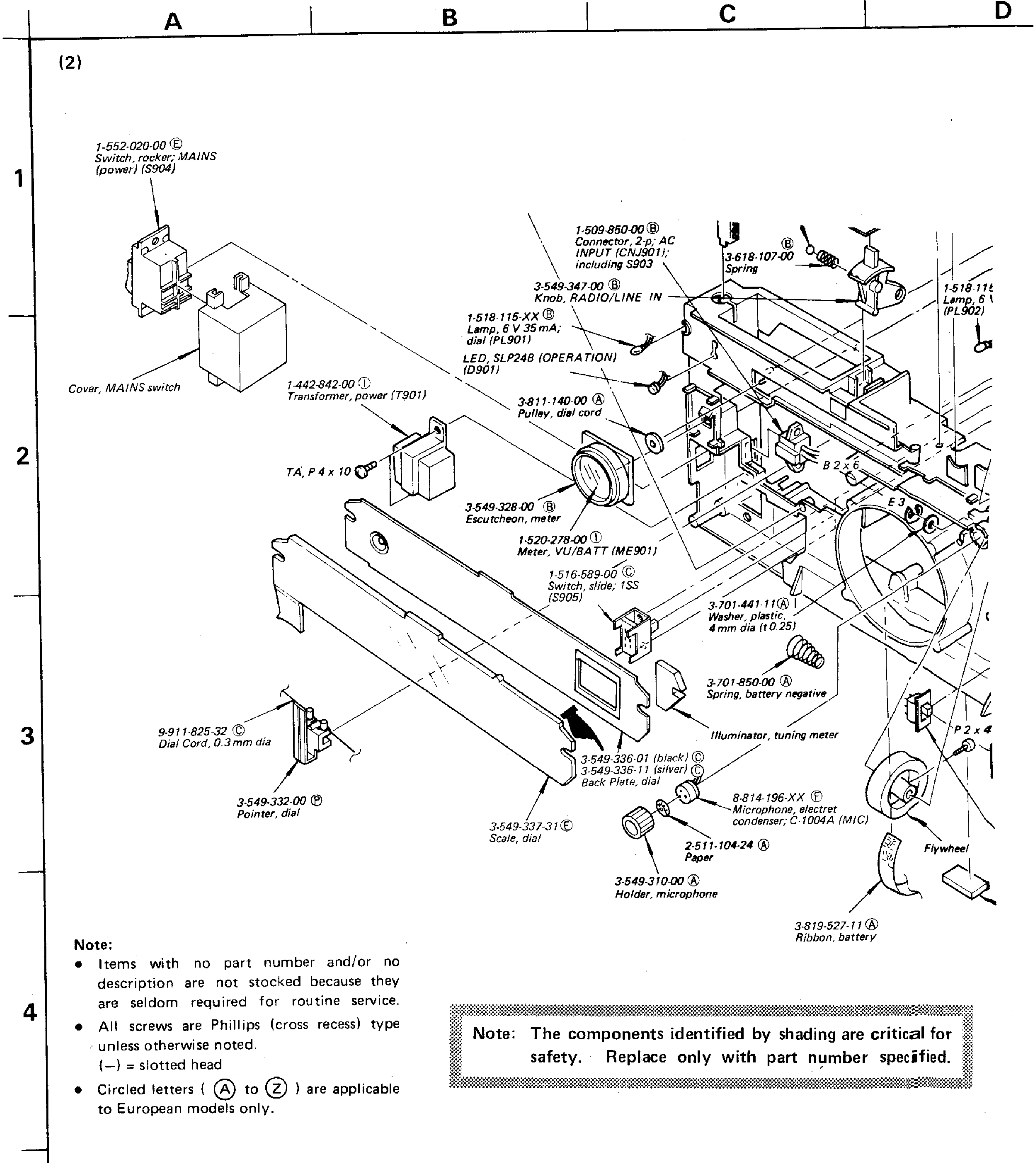
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Note: The components identified by shading are critical for safety. Replace only with part number specified.

☛: ADDITIONAL PARTS PORTION

page 21 of the Service Manual.

(2)


A
B
C
D
1
2
3
4
5
1-552-020-00 Ⓔ
Switch, rocker; MAINS (power) (S904)
Cover, MAINS switch
1-442-842-00 Ⓘ
Transformer, power (T901)
TA, P 4 x 10
1-509-850-00 Ⓑ
Connector, 2-p; AC INPUT (CNJ901); including S903
Ⓑ
3-618-107-00
Spring
3-549-347-00 Ⓑ
Knob, RADIO/LINE IN
1-518-115-XX Ⓑ
Lamp, 6 V 35 mA; dial (PL901)
LED, SLP24B (OPERATION) (D901)
1-518-11
Lamp, 6
(PL902)
3-811-140-00 Ⓐ
Pulley, dial cord
B 2 x 6
E 3
3-549-328-00 Ⓑ
Escutcheon, meter
1-520-278-00 Ⓘ
Meter, VU/BATT (ME901)
1-516-589-00 Ⓒ
Switch, slide; 1SS (S905)
3-701-441-11 Ⓐ
Washer, plastic, 4 mm dia (t 0.25)
3-701-850-00 Ⓐ
Spring, battery negative
Illuminator, tuning meter
P 2 x 4
9-911-825-32 Ⓒ
Dial Cord, 0.3 mm dia
3-549-332-00 Ⓟ
Pointer, dial
3-549-336-01 (black) Ⓒ
3-549-336-11 (silver) Ⓒ
Back Plate, dial
3-549-337-31 Ⓔ
Scale, dial
8-814-196-XX Ⓕ
Microphone, electret condenser; C-1004A (MIC)
2-511-104-24 Ⓐ
Paper
3-549-310-00 Ⓐ
Holder, microphone
Flywheel
3-819-527-11 Ⓐ
Ribbon, battery

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (—) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Note: The components identified by shading are critical for safety. Replace only with part number specified.

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